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THE SPHERE

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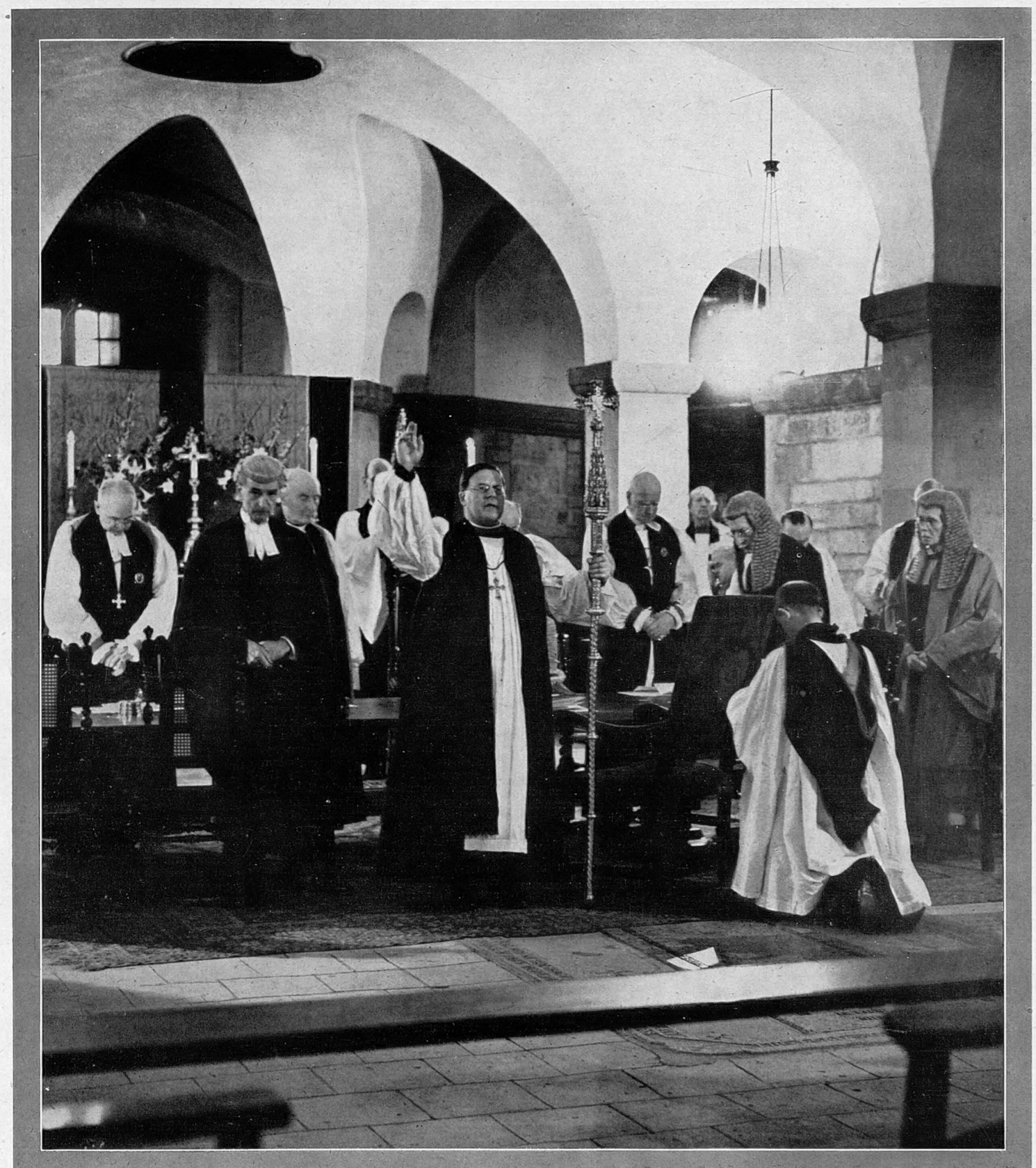
London, April 25, 1942



THE CONFIRMATION OF THE NEW ARCHBISHOP OF CANTERBURY: THE SCENE IN THE CRYPT BENEATH ST. PAUL'S CATHEDRAL AS DR. TEMPLE GAVE HIS BLESSING AT THE END OF THE DIGNIFIED CEREMONY

On April 17, at St. Paul's Cathedral, the election of Dr. William Temple to be Archbishop of Canterbury was confirmed in a ceremony of rare dignity. The proceedings opened in the Nelson chamber, where eight Bishops, the Lord Mayor and Sheriff, and the Archbishop-elect were present: then a procession took place to St. Faith's Chapel, below ground and amidst the stone pillars supporting the Cathedral. Here the Royal Commissioners and the lawyers took their places round a long rectangular table—a scene reminiscent of medieval times. After various documents had been presented and admitted, the Archbishop-elect knelt and, holding a Testament in his right hand, took the Oath of Allegiance; then, standing, he made the declaration against simony and the declaration of assent. The ceremony was brought to an end by the new Archbishop of Canterbury pronouncing the blessing, the moment shown above

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A WAR NEWSLETTER —No. 138

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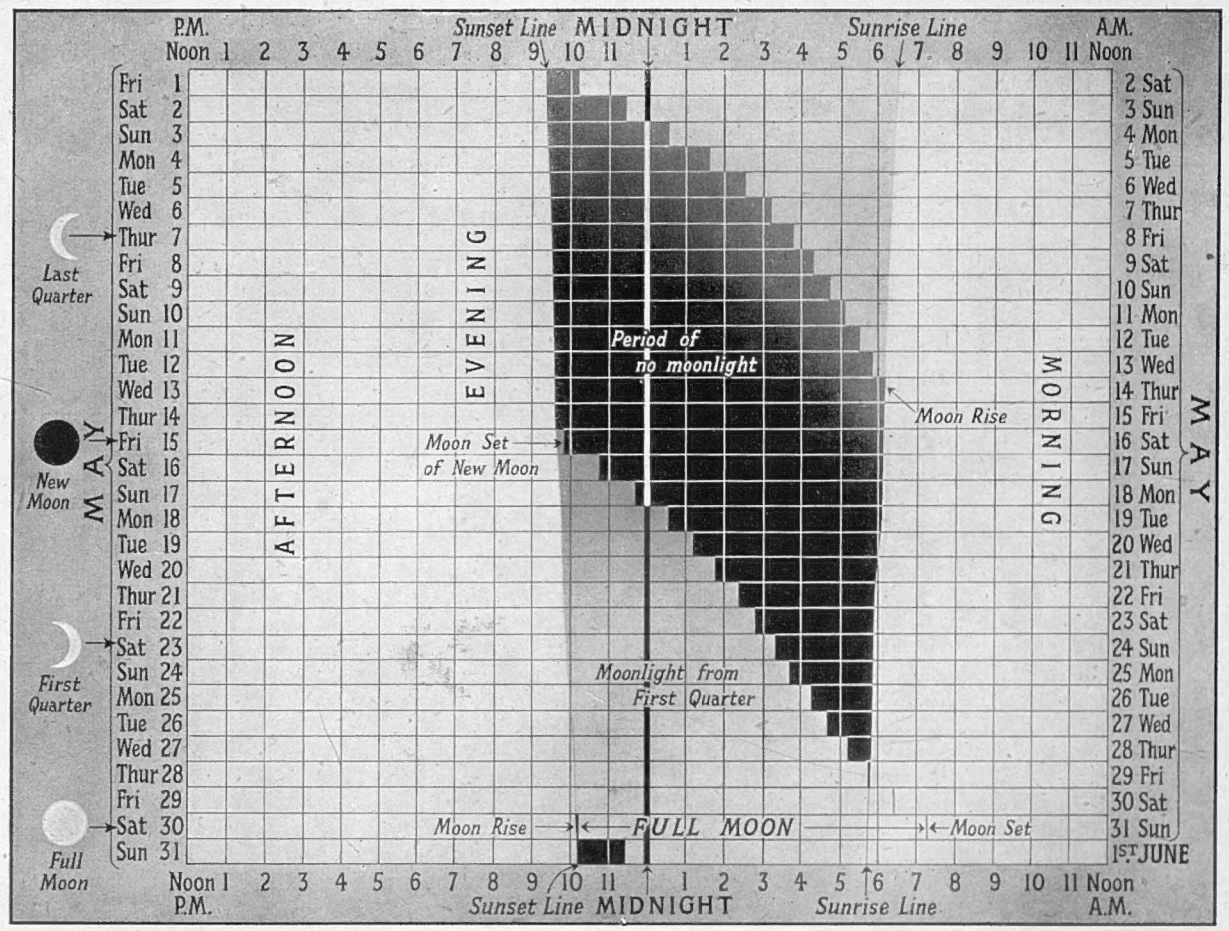
India.—If ever the wise saw of keeping silence even from good words applied with force, it does so to the debacle of Sir Stafford's mission to India. A man who writes knows—if he knows anything—that what is written in ignorance is written in impotence and is not worth writing or reading. We in Britain know all too little of India and of the complexity of its problems, castes and creeds. And our ignorance is little to our credit, who live in the very heart of a great Empire. We may sympathise with America for dismissing the "great refusal" as unbelievable folly and narrowness and myopia, provided we remember that a great proportion of Americans only a few months ago were pursuing the same myopic folly, talking, talking, with the enemy at their gates. Only one thing comes clearly forth from the tangle of confused strands and through the dark glass—this great refusal, based on (at present) irreconcilably conflicting interests, proves to the hilt the wisdom, or at least the necessity, of British policy in the past three or four years towards India. India was not ready. India remains not one but many nations, and "go slow" was the only possible policy in the evolution to self-government and Dominion status. It was not the issue of Defence, it was the hopeless difficulty of finding a representative opinion with which to treat. The sufferings of the next six months may create such a representative voice; and, if it do so, the good impression made by Sir Stafford and the restraint, dignity and friendliness of the conflicting elements should ensure that, when that day comes, India will instantly secure another chance to accept and try out as fair and wise and statesmanlike and generous a prelude to total emancipation as the dangers and complexity of the conditions admitted.

Price of Admiralty.—The price of admiralty is proving quite as heavy as we were led to expect as a result of Japan's entry into the war, and every bald announcement of the loss of our warships by bomb or aerial or submarine torpedo jolts us terribly and brings inevitably a new wave of criticism and doubt as to our naval policy and strategy. But it is not victims whom we must seek, but resolution and a sense of proportion. Germany had patented the technique of modern land and air war before we had absorbed the lessons of 1914-18. And clearly Japan had studied modern sea war with infinite pains before she risked all on her gamble. I doubt not at all that our Navy is fast catching up lost ground. The trouble with the Navy is that, in the appalling strain of "routine work," there is all too little leisure for experiment and planning. The "big-ship policy" is no doubt in the melting-pot. It may be that the future of sea power lies in developing smaller aircraft-carriers and submarines with longer ranges, and naval aircraft with heavier bombs and torpedoes. What can we know of these matters or of how they are being dealt with? Resolution remains for us and that sense of proportion, without which that virtue of resolution and faith is difficult to maintain. Let us remember that war is *destruction all the time.* Our ships are being sunk all day long and many of them cost millions to build. *But* Axis fleets and shipping do not increase and multiply while ours decline. Japan has already lost perhaps 15 per cent. of her cruiser strength, Italy perhaps 60 per cent.; the Nazi fleet to-day has a strength which is a perpetual preoccupation, but not a desperate menace to our Home forces, and the toll we have taken of the merchant fleet and transports of the Axis bears a higher ratio to the whole available tonnage than do the Allied losses. The world's visible reserves of oil—the prime curse of humanity—are considerably less than they were. I take a childish pleasure in remembering that fact. In the 1930's we used all to get together on anniversary days and glorify those pioneers who invented internal-combustion engines and experimented in flying. And the gods on Olympus (and Prometheus from his rock) looked down on the human mole-hill, and thought their thoughts of myopic man. To give myself due credit, I was on the side of Prometheus and the angels on those anniversaries, and never failed to tell you so.



THE "SPHERE" MOONLIGHT CHART FOR MAY

The period of darkness at the beginning of the month increases each night as the moon wanes towards its last quarter stage, which falls on the night of the 7th, after which the nights become completely moonless, with the new moon on the 15th. The first quarter stage is reached on the night of Saturday, the 23rd, and the full moon will be visible in the sky throughout the night on the 30th

A limited number of these charts will be supplied free of charge on application to the Publisher, "The Sphere," Commonwealth House, 1, New Oxford Street, W.C.1, but 2½d. in stamps must be enclosed with the application

The Daughters of Naval Officers.—This war has hit hard an institution which in war and peace must always appeal to the patriot and to the charitable of a discerning kind. The families of naval and marine officers must ever have a claim on a nation of seafarers who depend for bare existence on the freedom of sea ways. *The Royal School for Naval and Marine Officers' Daughters* would, but for the war, have celebrated its centenary at Twickenham in 1940. But the premises at Twickenham were laid in ruins by bombs, and at last this famous and useful school has found another permanent home at Stoatley Hall, Haslemere. To furnish it and to pay for removal cost money which was not there. Was the gamble an illegitimate risk to take? I cannot think so. In one sense the war must have benefited this cause. It cannot fail to have underlined this nation's obligations to the families of those who have done for so many centuries more than any other class for the preservation of our existence as a nation. *War orphans* are educated at and launched from this refitting centre—what need further to stress our opportunity, our clear duty, our privilege, to help the families of those who have given their lives that we might live? Cheques should be sent to the School (named and italicised above) at Martin's Bank, Ltd., 16, Whitehall, S.W.1. *Cheques, postal orders, stamps.* I believe that many SPHERE readers will feel the call and will wish to be in the movement, to show their sense of obligation to the best of their ability.

Battles Long Ago.—To those in search of "Escape" literature, I recommend that long and evergreen classic, *The Memoirs of Baron de Marbot*, the only original Brigadier Gérard, from whom Conan Doyle borrowed to such good purpose. Marbot was a favourite with Bonaparte and saw a lot of him in the wars in Italy, Spain, Germany, Austria and Russia. He was a student of war and his record glorified the Grand Army with discrimination. He saw Napoleon's faults, and none was so capital as his toleration of the jealousies of his Marshals, who time and again lost battles or failed to follow up victories through refusal to co-operate with or to serve under rivals. Yet what comfortable and apt reading it is! If a genius like Napoleon was already foredoomed to ultimate failure (as he was) before the Russian gamble was planned, how can Hitler hope to dominate the world—the impossible feat? Every salient feature of the Napoleonic wars is reproduced to-day, and as lively and true as ever. The peoples of the Allies outstripping their Governments in courage and enterprise, the failure to co-operate until too late, the inevitable ruin of striking at Russia, the inexorable doom of two-front campaigns, the certainty that in the bitter end the strongest effort to dominate or enslave free peoples must fail, chiefly through the revolt of those already enslaved. Boney was a fell bogy for a generation. Compared with his modern imitator, he stands not only a giant, but a model of humanity, culture, civilisation and breadth of mind. Napoleon failed, and Hitler's doom (with knobs on) is as clear to read as was Napoleon's after the passage of the Beresina. Try Marbot for bedside reading.

Tobacco and the Home Guard.—I think the Budget a good war Budget in principle. I don't personally complain of it. *But* pipe tobacco at over 2s. an ounce is indirect taxation with a vengeance. Then why smoke? I can only reply that more tobacco is being smoked than ever before. Presumably war stress requires some such stimulus and comfort. This truth is acknowledged for the fighting Services and their women assistants. But the defence Services and the Home Guard share with the Army in Britain such stress of war as falls upon this island. Night patrols and observation in winter are not without discomfort, and call for consolations. The pundits come down to address the Home Guard and enthusiastically speak to their brief: "I want you fellers to know that the Government and the War Office cannot exaggerate or overstate the value and reliance they place on your voluntary and patriotic services. The country owes you a debt of gratitude which they cannot repay." And henceforth you will pay 2s. an ounce for your pipe tobacco and another 40 per cent. on your cigarettes (and you must keep your private cars licensed to run on Home Guard occasions and coupons, in order to keep this indispensable army mobile). Well, let me not labour the point or make heavy weather of a new call on our patriotism. But for the life of me I cannot see the logic of it, nor distinguish between the stress of war endured by the Army in England and that endured by the Home Guard and defence Services hitherto, *vis-à-vis* the need for the comfort of tobacco.

Cloud-Cuckoo Land.—The cuckoo gave his first recital here on April 11. He was then completely silent for a week of almost June weather. The early cherries are out, early; the early rhododendrons are out, nearly a month late. The larches are late, the birches normal, the chestnuts rather more than punctual. After a hard winter there are more survivors in the bird world than ever before in my experience of non-migrants. Among migrants the chiff-chaff came late; and the willow wrens drown all rivals. And the seed potatoes have been three weeks in their journey by rail from Edinburgh and still give no sign of progress south. But a week of June weather in early April has consolations and delights even in wartime.

THE OLD STAGER

Drawing by Roland Davies

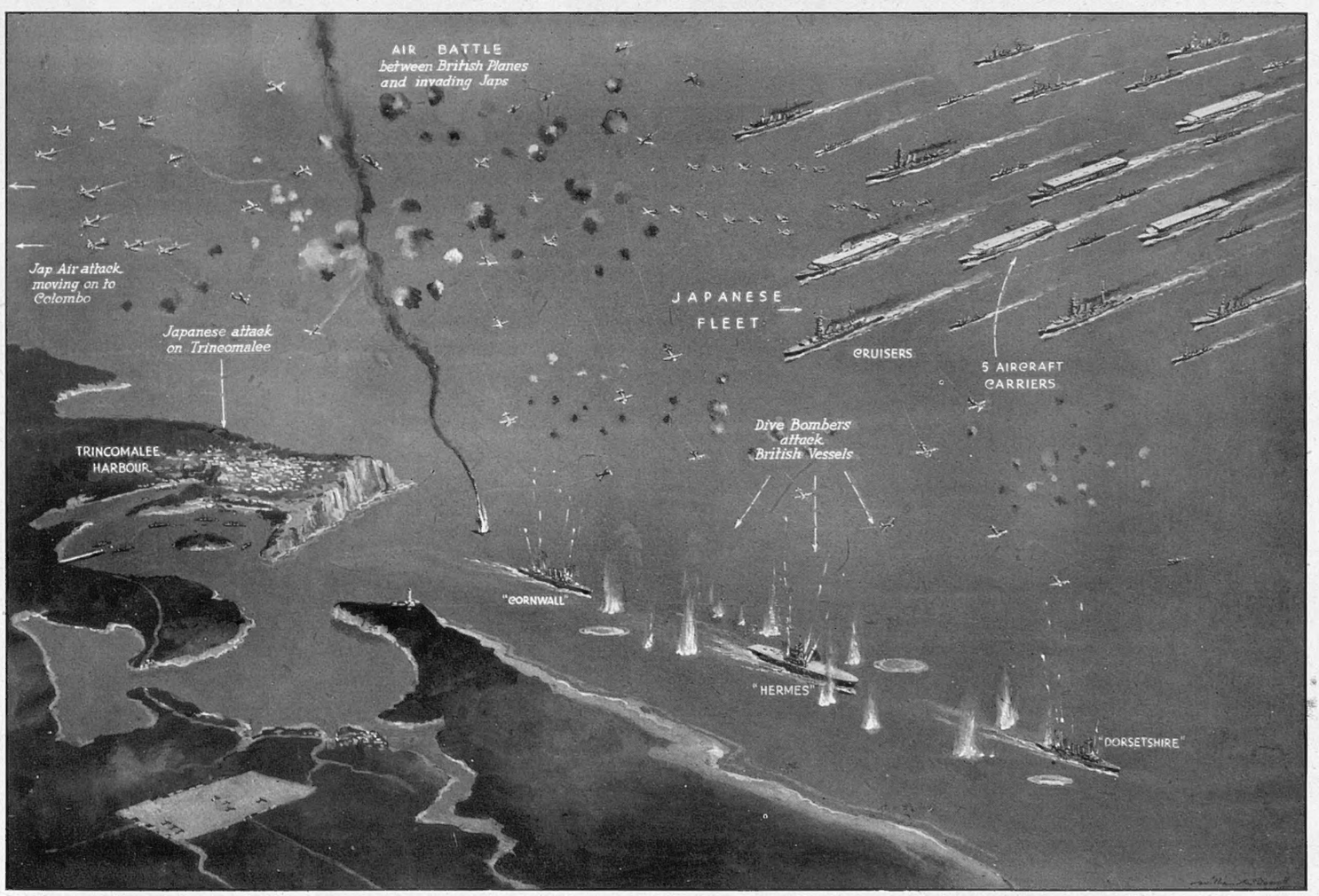
THE HUGE FOUR-ENGINED LANCASTER BOMBERS ON THE WAY TO AUGSBURG: Rushing over the rooftops of the German villages en route, with cannon shells from German fighters astern crashing into the houses and blowing holes in the walls and gables

AUGSBURG RAIDED in DAYLIGHT

By crossing more than a thousand miles of enemy and enemy-occupied territory in daylight, the new four-engined Lancasters of Bomber Command have just carried out one of the most daring flights of the war. Their objective was the factory of the Maschinenfabrik Augsburg Nurnberg A.G., where heavy tanks and Diesel engines for warships are made.

Setting out in the afternoon, the twelve Lancasters crossed the Channel in full daylight, flying very low all the way at a height of 25 to 30 ft. German fighters got on the bombers' tails and a running fight ensued. Fighter after fighter attacked from astern. "Their cannon shell were bursting ahead of us," said one pilot. "We rushed over the roofs of a village, and I saw the cannon shells which had missed us crashing into the houses, blowing holes in the walls and smashing into the gables of the roofs."

The target was reached, and it is considered that great damage was wrought at Augsburg. Seven out of the twelve huge bombers did not return—but all have earned the praise of the Prime Minister.



The JAPANESE NAVAL and AIR OFFENSIVE in the BAY of BENGAL

Which Resulted in the Loss of the "Cornwall" and "Dorsetshire" and the Aircraft-Carrier "Hermes"

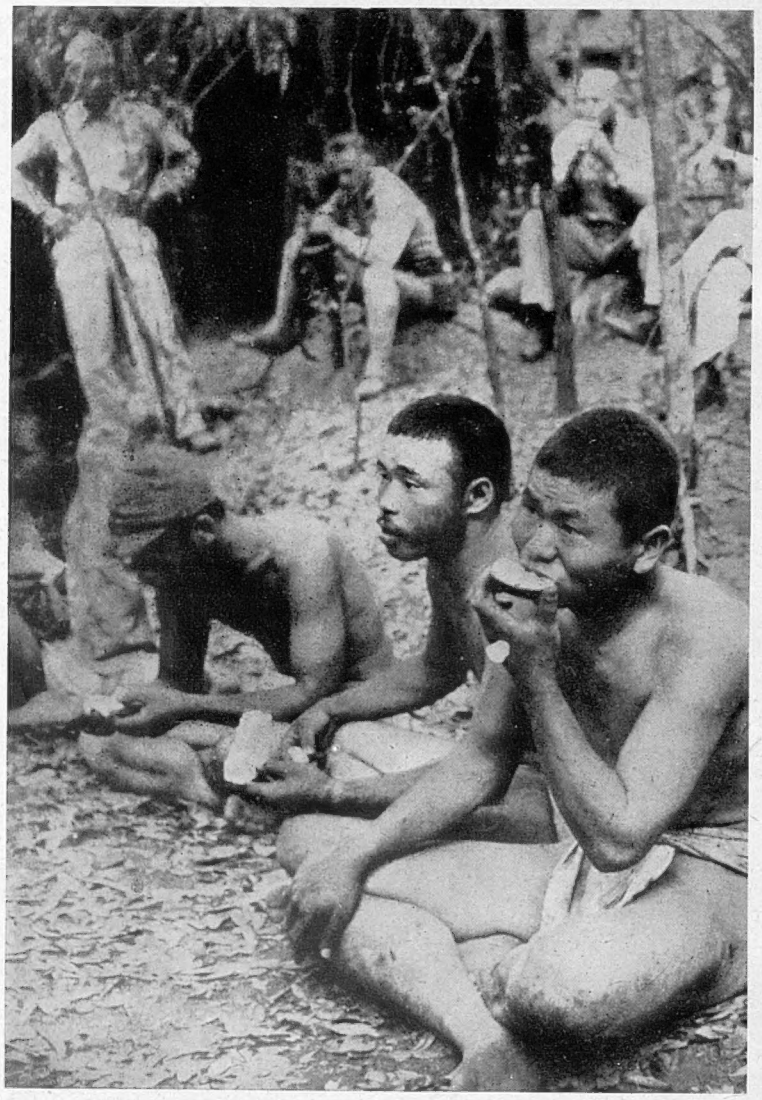
—Diagram Drawing by Wm. McDowell

In the earlier part of April it became evident that strong Japanese naval and air forces were in process of invading the waters of the Bay of Bengal as far as the eastern shores of Ceylon: the first intimation of this came from enemy sources which claimed the sinking of two British cruisers. Later, it was learned that these were the County Class cruisers *Cornwall* and *Dorsetshire*, both sunk by dive-bombers off the east coast of Ceylon. They had left the base of Trincomalee, in order to escape a probable bombing attack within the harbour itself. The aircraft-carrier *Hermes* was also sunk in almost the same waters. An air battle also took place within this area, and Trincomalee and Colombo were both bombed, but our fighter planes inflicted great losses on the Japs. All these operations resulted from the appearance of a Japanese fleet of considerable size which loomed out of the Bay of Bengal. All three British warships were sunk, not by torpedoes, but by dive-bombers which evidently came from some five Jap carriers. The rest of the enemy fleet probably consisted of three battleships and a like number of light cruisers, with an outer protection of some dozen destroyers

PICTURES FROM BATAAN

How the Peninsula was Defended by the Americans, and the Types of "Sub-Human" Soldiers against whom they Fought

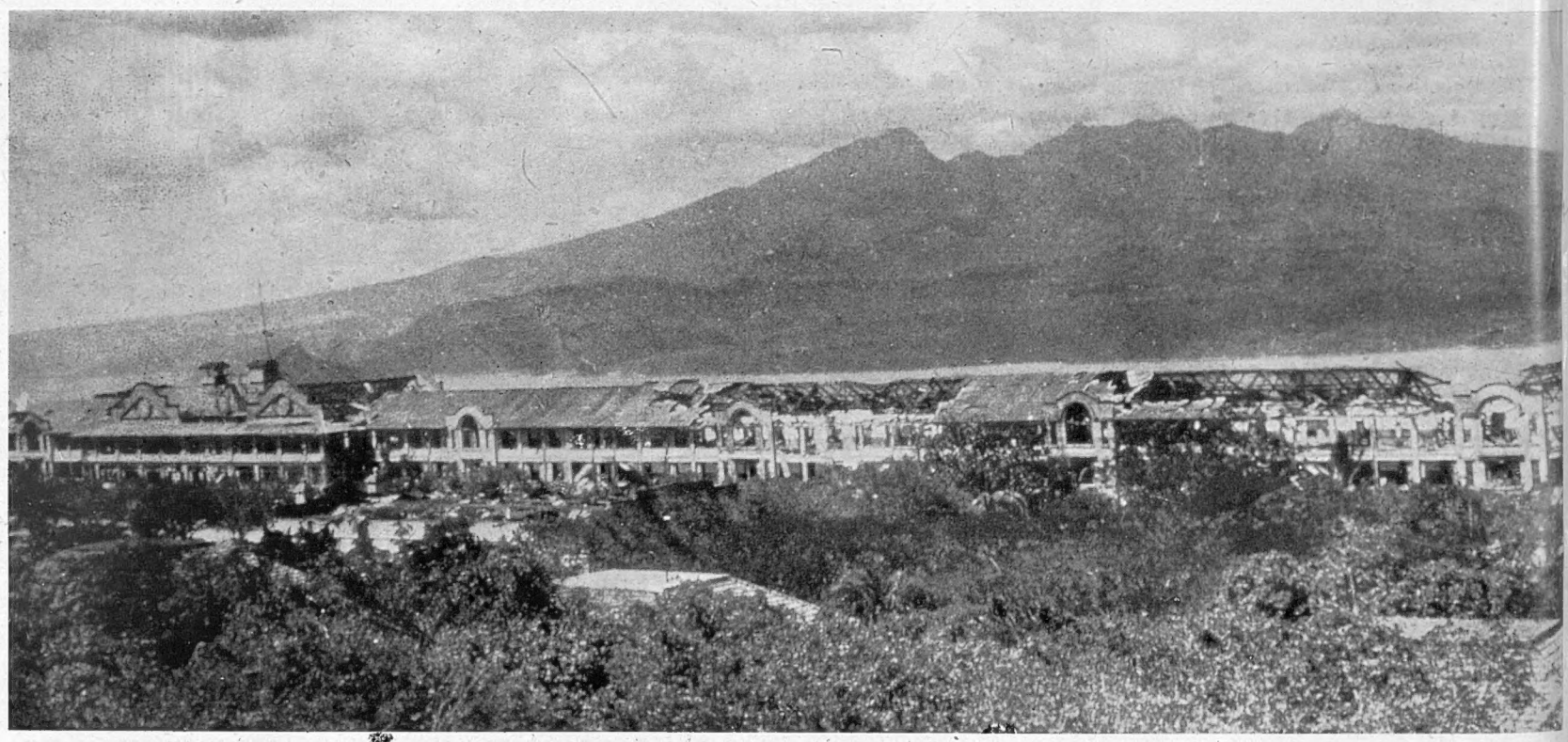
—A New Series just received from the United States



JAP SOLDIERS, CAPTURED ON BATAAN BY THE AMERICANS : These men, almost sub-human in appearance, were clothed only in loin-cloths. Although the defenders of the Peninsula were themselves seriously short of food, they shared their bread rations with these prisoners, who appeared to be starving. It is reported that the Japs were good soldiers whose religion seemed to help them to overcome the fear of death. The Filipino defenders of Bataan were also good fighters—amongst the best in the world; but, being virtually civilians, with less than six months' training, they were unable at the end to stand against the more experienced Japs. Conditions of life, after the enemy had launched assault after assault, were very severe: for two and a-half months the U.S. forces slept without tents, and towards the end the food shortage became very serious indeed, although the Bataan troops never lacked ammunition

A NUMBER OF JAP PRISONERS BEING BROUGHT IN FOR INTERROGATION : This picture was taken during the early days on the Bataan Peninsula. Many of the prisoners were barefooted, and dressed only in loin-cloths—this being the practice of the hardy Japs in jungle warfare. They travelled light, having discarded everything but the bare necessities and their weapons, so as to be able to ford or swim rivers, climb trees and carry out guerilla tactics. All the prisoners were bound and blindfolded when brought in to headquarters by American and Filipino soldiers

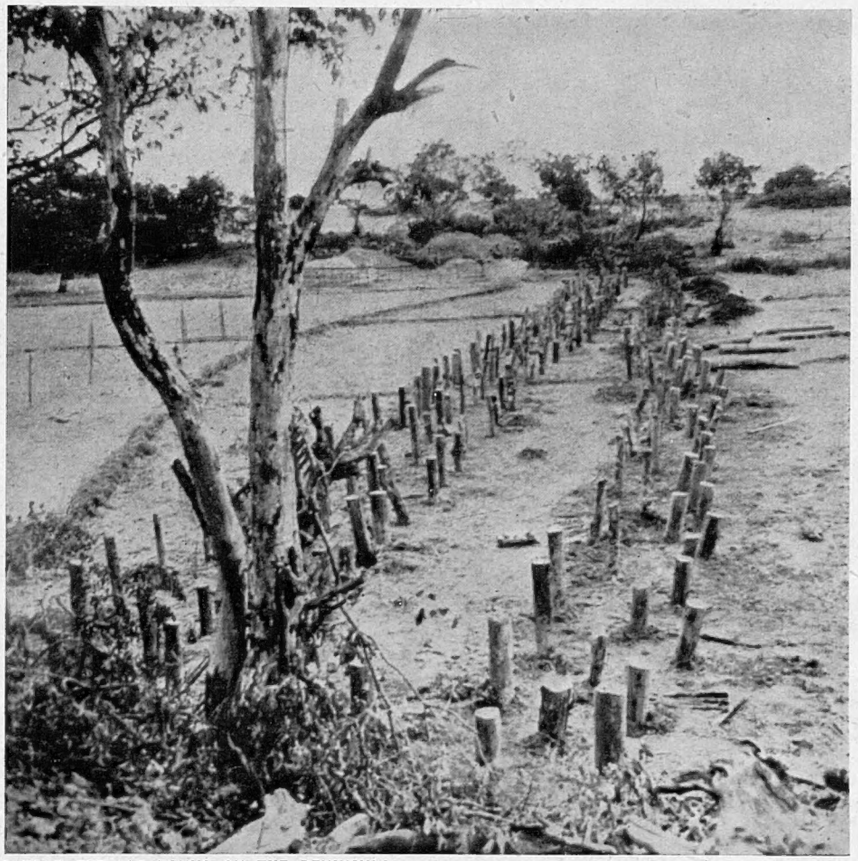
THE TYPE OF U.S. SOLDIER WHO FOUGHT THE JAPS ON BATAAN : On the left is Captain Art Wermuth, of the U.S. Army: he has been called the "One-Man Army," being credited with having accounted for a hundred of the Japanese invaders. Seen with him is his aide, the companion on his forays into enemy territory; both are fully equipped with appropriate armament



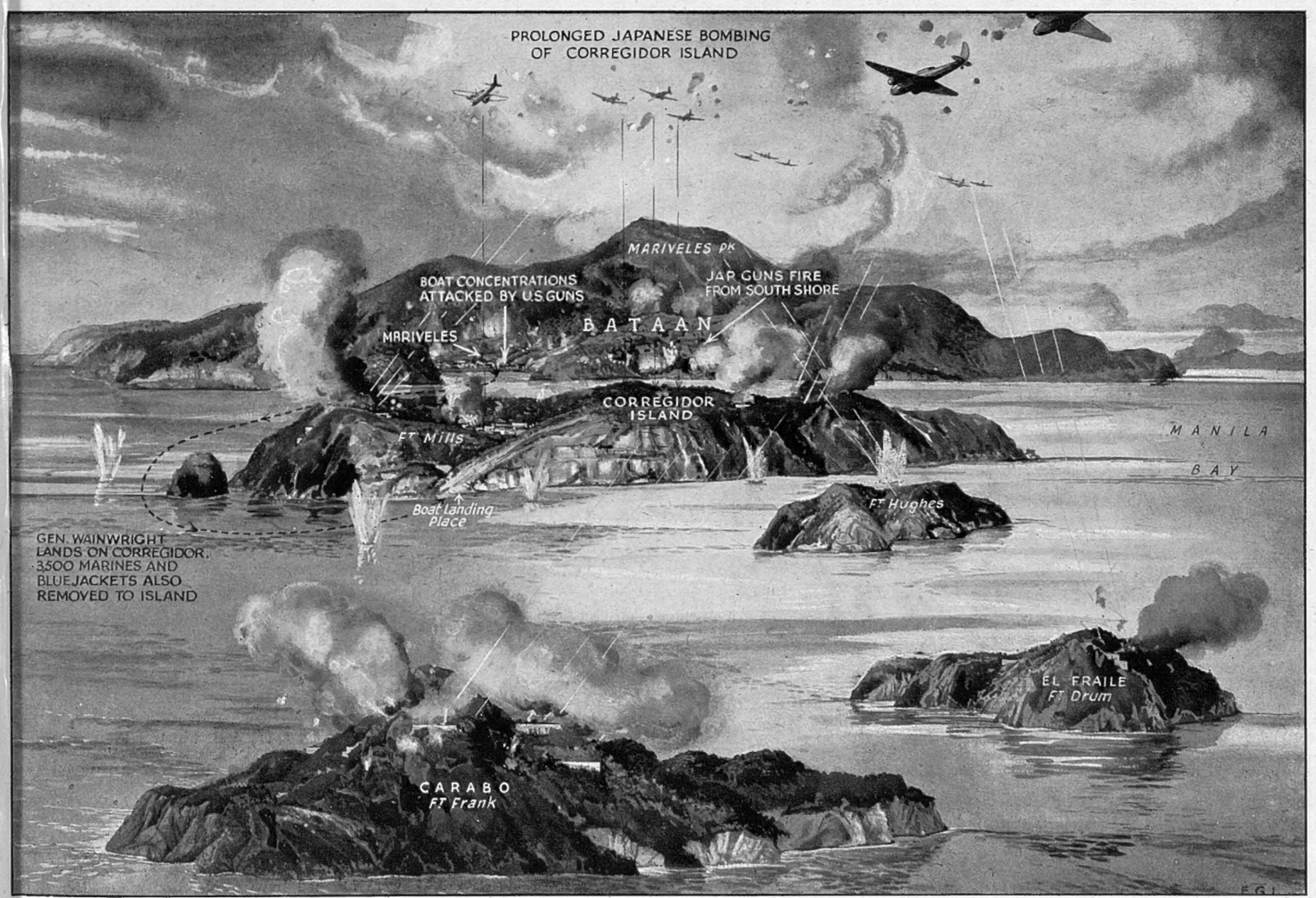
LOOKING NORTHWARDS FROM THE ISLAND OF CORREGIDOR TOWARDS THE PEAKS ON THE BATAAN PENINSULA : The towering peak of Mariveles rises in the distance; in the middle-distance is the North Channel into Manila Bay which lies to the eastwards; in the foreground are the bomb-wrecked above-ground installations on Corregidor Island which were pounded during incessant attacks from the air by Jap bombers

GENERAL MACARTHUR'S QUARTERS ON BATAAN BOMBED BY THE JAPS : This is the bungalow occupied by General and Mrs. MacArthur : it was partially wrecked after a raid on December 29. A bomb crater is seen in the foreground, and the walls of the bungalow are spattered with bomb fragments. At the time of the raid the General was at his post, and Mrs. MacArthur and their small son were safe in a bomb-proof shelter

AN AMERICAN SOLDIER IN A "SLIT TRENCH" poises a bottle-bomb for action against a Japanese tank



A TRAP FOR JAP TANKS ON THE PENINSULA : Defences such as these were used to delay the enemy's advance : wherever open stretches were found, they were at once covered with defensive positions. But, ultimately, General Wainwright found that the food situation was becoming so acute (ammunition remained in plenty, and millions of rounds had to be destroyed before the surrender) that he had but little option. In addition, more than 20,000 men were down with malaria in the last few terrible days before the heroic four-months resistance came to an end



THE STARS AND STRIPES MOVES FROM BATAAN TO CORREGIDOR ISLAND after the end of resistance on the Peninsula—*Drawing by E. G. Lambert*

When, around the morning of April 10, the worn-out defenders of the Bataan position had to succumb to Japanese continued onslaught, the flag of resistance was moved across the narrow strait dividing the Peninsula from Corregidor. Both American and Filipino troops had fought on until sheer lack of food and sleep rendered continued resistance impossible. The local command was, however, able to rescue 3,500 U.S. marines and bluejackets. They were conveyed by boat from Mariveles, the little town on the southern shore of the Peninsula, under cover of darkness to a base landing-place on Corregidor. The submarine tender *Canopus*, a dry dock and minesweeper were also destroyed. With the collapse of American resistance, the enemy advanced down the Peninsula and planted guns on the rocks overhanging the southern Bataan beaches. A duel between these guns and the island batteries opened up and continued for many days. Bombing from the air was almost continuous, but as ammunition stores and many of the gun positions are well protected by underground or semi-underground excavations, the island resistance continued. General Wainwright, the U.S. commander, and his staff continued to operate from the island ; it must have been a welcome sight when the heavy bombers of the American-Australian Air Forces under the U.S. General Royce came over on their bombing expedition to Manila airfields and other Luzon objectives. A Japanese attack by boat-carried forces appeared to be imminent, but the positions from which these were developing were heavily shelled and the attack was stopped for the time being. All the small island forts located around the main island of Corregidor continued to resist in conjunction with the heavier batteries on Corregidor itself

HOW SPORT and PLEASURE WILT UNDER the NAZIS

The Film and the Theatre are Decaying in France, Despite the "Migrations" of Paris Companies; Literature is on the Decline, Having Given Way to Propaganda; and Sport has Come Under the Control of a "Sport Dictator" Whose Job is the Regeneration of the Youth of Whom Pétain Talks so Much and so Ardently

JEAN BOROTRA, as he was in his heyday, the idol of Wimbledon and of the tennis-loving world. He is now a fervent follower of Pétain, by whom he was made "Sport Dictator" of France. When his appointment was made known shortly after the Fall of France, many other French sportsmen, notably Carpentier the boxer, protested vehemently at his appointment as Ruler over *all* sports

By FERDINAND TUOHY

AT a time when certain forms of entertainment and sport are being rendered less accessible to us under the sign of Austerity, it is not without profit to survey how lucky we have been compared with the withering of public distraction and recreation in territories deadened by the Nazi presence. One does not exactly expect entertainment and sport to thrive in countries which happen to be smitten by Total War; but the Germans went out of their way to put over the *panem et circenses* business in these occupied or near-occupied lands. Bread and spectacles in order to hide the real tyranny lurking in the background. They subsidised the theatre, the cinema, the bookshop and the sporting club. They sought to hoodwink each conquered country by affecting to respect its special forms of recreation. But the whole edifice is steadily coming to naught.

For one reason or another—lack of physique, lack of funds, lack of heart are three of the chief reasons—the possibilities of diversion are growing rarer and rarer, and an immense international public aching for some manner of escape is gradually and mournfully giving it up as a hopeless job.

Take what has happened to the films in France. The cinema is still an appreciable attraction in the big towns, but it is losing rapidly through dearth of new films. Last year the Vichy Government prohibited all pre-June-1940 films. This was done at the request of the Germans, who not only wanted "subversive" films out of the way, but desired room for pieces doing Hitler propaganda. Pétain joined in this notion, decreeing that France had to be serious for its penance, and that the old joyous films like *The Baker's Wife* had no place from then on.

But the way in which the all-powerful *Ufa* set to work had not been foreseen by Penitent Vichy. It inflicted on France a shower of anti-Jewish films, many of them specially written. Where this did not openly offend big audiences—as when *Jew Süss* produced rioting at Lyons and Toulouse—people got more and more bored and Prefects were soon reporting that something else was necessary. The next idea, therefore, was to marry famous French film successes, like *Topaze*, which showed up Republican bureaucracy, with camouflaged Nazi films. But the public swiftly saw through this, and started trouble at Marseilles over an obvious German piece called *The Rapacious Ones*.

So, what now? The poor French cinema, that once bright star, is reduced to showing a selection of "safe" films from the dim past; only they are not always so safe for the operators inasmuch as they split and tear and sometimes go up in flames. Soon everyone in town and hamlet will have seen all these vetted films time after time. Then the cinema looks like gradually closing its doors *faute de public*.

The decay of the theatre has been even more thorough. Shades of Bernhardt, Réjane, Coquelin, Guitry! A few theatres keep going, for German officers and their friends in Paris principally, but otherwise the French theatre has died in the villages of France. Paris and Vichy, acting in concord, arranged for what were called "migrations" round the whole country. Companies with fine actors and actresses, musicians and producers were sent off to act on improvised stages at two and three townlets or villages each twenty-four hours. All kinds of pieces were played to cheer up the inhabitants. But material handicaps grew too heavy, and one by one the companies had to report failure. They either could not find bread or lodging or transport or fuel or lighting.

Incidentally this failure, which also affected film artists of the front rank, is part explanation of some of the latter going to Berlin to work under Nazi auspices. It is hoped to launch resultant films on French people, but these have a list of artists who have "collaborated" and will refuse to accept their work when it is shown in France.

If the theatre is sinking, the travelling circus is knowing the one and only success among contemporary distractions on the Continent. Provided a manager can come by enough fodder for his horses and other food for a few trained animals, he plays to packed tents day after day. The people derive some pre-war comfort from getting together in the friendly ambience of the "Big Top," while the success of the performance is usually the clowning. This allows for all kinds of jokes at the expense of the Nazis, jokes subtle and not so subtle, and even the police or military at the door cannot refrain from joining in the mirth.

The circus being able to carry on muchly as a self-contained concern, scores over all other forms of entertainment essayed under hostile occupation. "Even in hardest winter," writes a friend, "hundreds snuggle together for two and three hours and seem to regain just a touch of vanished liberty." What a picture that would be for a Lautrec of to-day!

By contrast, the decline of reading matter, particularly in France, where it was the most widely pursued form of escape from life's ugliness, has been devastating. In the centres of lesser population the local bookshops have long since run out of all acceptable stock. The rare novels which currently appear bear the stamp of present politics and find no public. This refusal to read Nazi dope, or to glance over newspapers turned out by Nazified journalists, has one unfortunate effect. It allows in a collection of flamboyant publications cunningly marketed by the Germans in the occupied territories. These publications, often beautifully done and carrying stories and articles of much merit, are difficult to resist when there is nothing else in sight to read.

One distressing effect of the decay of public distraction under the Nazis concerns the trouble it freely makes between the young and middle-aged or parental. Many of the middle-aged consider that there ought to be no pursuit of distraction when, as in the case of France, as many Frenchmen remain in captivity and deprivation—1,300,000—as were killed in the last war. To this the young of both sexes say that fun and smiles are as necessary to them as meat and vegetables: they refuse to go about with long faces and prefer to collect what gaiety they can.

This refers mostly to those who were in their later teens when the war broke out, and, as it happens, they have been deprived of something which might have made a lot of difference: sport and athletics. Here a character enters on the scene—Jean Borotra, who used to be referred to as "the darling of Wimbledon." Well, there are many British and Americans who would, no doubt, prefer that Jean had espoused another than Pétain, whose praises he has had to sing on innumerable occasions up and down both French zones; but maybe it is fairer to give Borotra the benefit of the doubt, and to believe that his one care has been to produce as much health as humanly possible in the youth of France.

Borotra was always more than a tennis player. He used to tour the wide world on behalf of powerful industries, particularly oil. He grew rich and influential. But he took part honourably in this war, as he had in its predecessor. Only when Vichy called him as Sports Director, did he decide: "Well, I suppose this is my job, seeing that I have won more championships than any other Frenchman, dead or alive."

Borotra set about a revolutionary programme. He demanded and obtained a budget twenty times greater than the pre-war one, and drew up a mammoth scheme for stadiums and sports grounds, large and small, for every commune of *both* Frances—for the Germans allowed him to go where he wished, and his path has often taken him to the industrial north, notably St. Omer, which produces, or produced, most of the sporting equipment of France.

Borotra said the peasants never did as much athletics as the townsfolk. The peasants said their work tired them too much. That would have to be rectified, decreed Borotra. Another thing: no more professionalism. No more "gates" of fifty thousand staring at twenty men on the field.

In the event, the only professionals tolerated were a few cyclists and boxers who were certain of championship honours. All other champions, instead of joining the professional ranks, were taken under the Government and formed into instructors and administrative personnel. Headquarters in the south is at Antibes, where champions at football, ski-ing, basket-ball, tennis and so on are trained in how to instruct others. The Government—that is, Borotra's Department—appoints all presidents, treasurers, secretaries and committee members throughout the country. The real bosses are the State Champions. They do not get paid very well—from £175 per annum in the country to £300 per annum in Paris—but they receive all kinds of expenses and are constantly travelling, even over to North Africa. Their "recordman" this year is a young fellow named Brisson, grandson of a distinguished dramatic critic.

Well, all this may sound beautiful. But not for wartime. One cannot regenerate a country even in sport when its neck is under the boot of a conqueror, and Borotra has had to admit the truth. Not only cannot he get adequate equipment—only 60,000 pairs of football boots and 1,500 skis this year—but he has had to admit what is far more devastating: that the physique of youth is sinking so much that these young men (women are barred) are unable to indulge in sport and athletics even with all the equipment in Christendom. A powerful committee went the length of demanding the prohibition of all sport where exertion was necessary, and Borotra had to accede by cutting down compulsory training to three hours a week.

As for the grandiose project of stadiums right and left, only 400 out of 6,300 that were planned have come into being. Here Borotra made a miscalculation. He had a billion francs to play with, but he relied on the towns and communes providing almost as much again so that all should benefit locally. When one mentions that half these places which were expected to pay are in Occupied France, the amount the Bounding Basque succeeded in collecting will not require further elaboration.

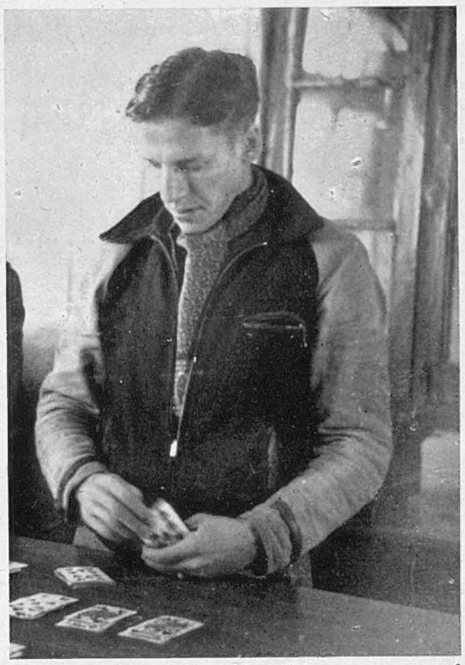
THE MAN WHO WILL NOW PUSH FRANCE FURTHER TOWARDS GERMANY AND THE "NEW ORDER": Pierre Laval, who has been described as the most hated man in France, is now also the most powerful after Marshal Pétain. At long last he has been installed as Vice-Premier, presumably at Hitler's orders. This is the first picture taken after Laval's emergence into public life once again after the attempt on his life at Versailles last August: it was taken at his Castle of Chateldon where he went to convalesce

"A.V.G." (American Volunteer Group)

The American Pilots who have Been Beating Back the Japs over Burma and on the Chinese Borders

MEMBERS OF THE A.V.G. AT TEA IN THEIR MESS, beneath portraits of Roosevelt and Chiang Kai-shek and the flags of the two countries: All these men are American pilots

ON THE PILOT'S BACK IS THE A.V.G. FLAG, and instructions in Chinese, to safeguard him if he has to force-land or is shot down. The instructions direct the "finder" to return the pilot to Headquarters!



A TYPICAL PILOT OF THE A.V.G. at a game of patience whilst waiting for an alarm

PILOTS LINED UP BEFORE ONE OF THEIR KITTIHAWKS: In one week-end these men shot down eighteen Jap planes

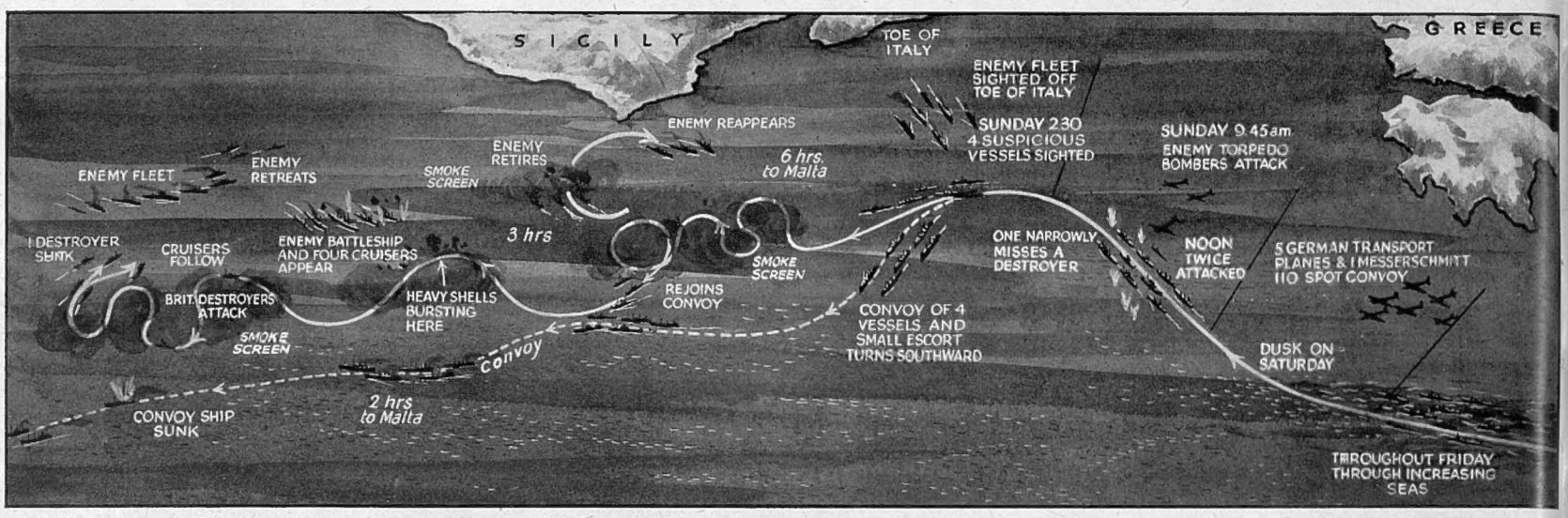
PILOTS OF THE A.V.G. WAITING FOR AN ALERT ON A MAKESHIFT AERODROME north of Toungoo in Burma: Note the Chinese markings on the aircraft

AN AMERICAN PILOT SHOWING A CHINESE HOW A PARACHUTE IS FOLDED

The American Volunteer Group is a band of pilots from the U.S. who have been serving in China and Burma: since the coming of the Japs to the latter country they have been in almost daily combat in the air against enemy bombing and fighter aircraft. Led by Colonel Clare Chennault, they have scored many notable successes, especially during the early raids by the Japs on Rangoon. Rates of pay are very high, judged by R.A.F. standards, but the majority of the pilots are men of considerable experience, who gave up lucrative posts in civil aviation in America to volunteer for service in China before the entry of the United States into the War. Their presence in China and Burma has put great heart into the Chinese troops fighting in those regions. Colonel Chennault, who has been in command of the Group, has now been recalled to the U.S.

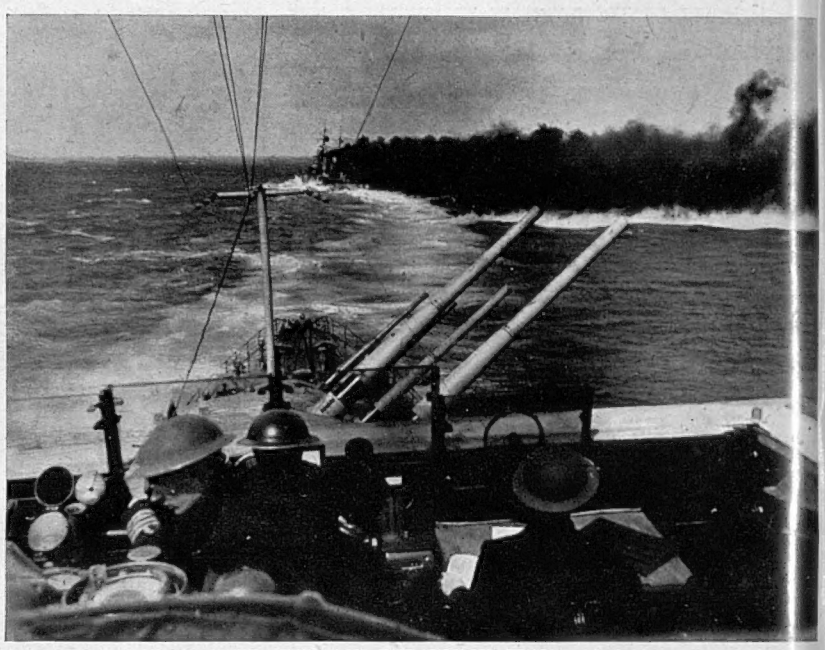
THE BATTLE OF THE MALTA CONVOY

Official Admiralty Pictures Taken During the Actual Engagement between Admiral Vian's Light Squadron and a Strong Force of Italian Warships in the Mediterranean on Sunday, March 22

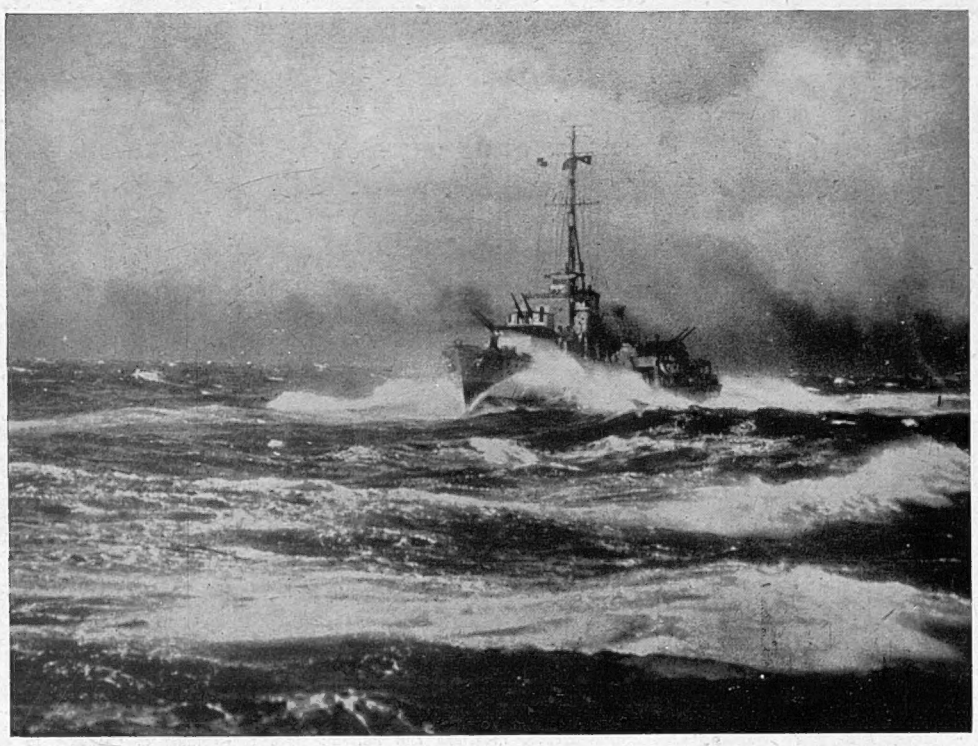


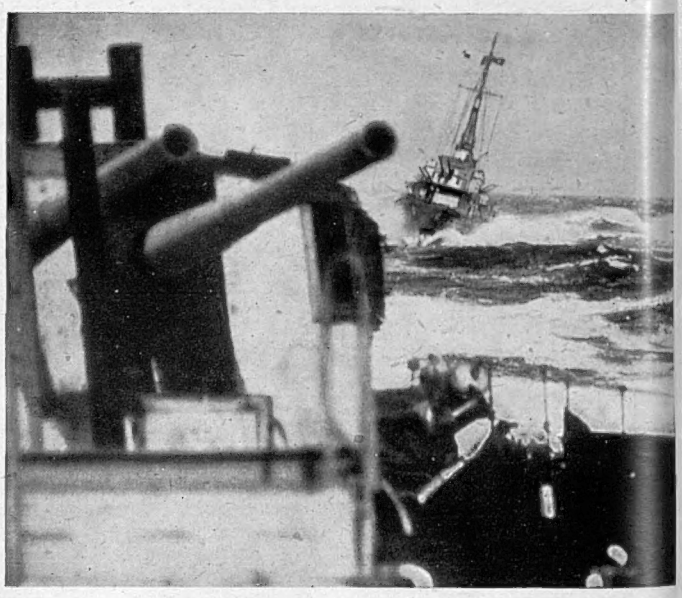
THE CONVOY STARTED FROM ALEXANDRIA ON MARCH 20. On Sunday, March 22, the Italian Battle Fleet put out and the action depicted in the pictures reproduced here then ensued. Most of the action was fought behind the smoke-screen skilfully laid down by British cruisers and destroyers—*Drawing by E. G. Lambert*

A BRITISH LIGHT CRUISER THROWS OUT A SMOKE-SCREEN, as another British cruiser astern elevates her forward 5·25 guns ready to shell the Italian fleet



PLOUGHING AT TOP SPEED THROUGH THE ROUGH SEAS, and laying down a dense barrage of smoke. Note the steel-helmeted officers and ratings



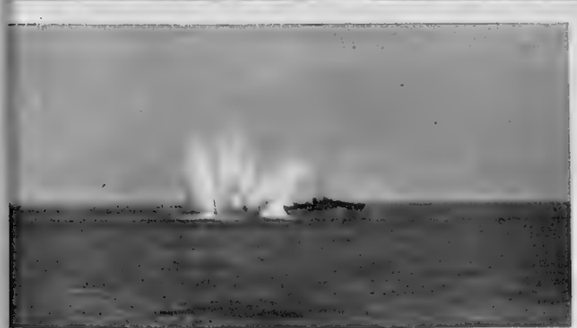


***On left*—A destroyer comes hurtling out of the smoke-screen and takes up position just before firing her torpedoes. *Above*—After the torpedo attack, the destroyers take avoiding action to evade the enemy's shellfire**

On Sunday, March 22, a sudden and fierce gale sprang up in the Mediterranean. In consequence the Convoy bound for Malta from Alexandria was delayed, and gave the enemy a fine opportunity for carrying out an attack on the vessels so needed for the island's defence. When the Italian Fleet came out to give battle, the sea was rough, churned to frothy white-caps by a south-east wind : had any of the warships been sunk, there would have been little possibility of surviving in a lifebelt or in a small boat in such a sea. Admiral Vian's light squadron consisted of no more than a 6-in.-gun cruiser, anti-aircraft cruisers and destroyers. But against them were ranged a battleship of 35,000 tons (with 15-in. guns), two 8-in.-gun cruisers, four 6-in.-gun cruisers and destroyers. Our strategy included a most skilful use of smoke-screens, through which the enemy was afraid to penetrate for fear of what lay in wait for him behind. In and out of this screen dodged our own cruisers and destroyers, hammering away with their very much lighter armament. It was too much for the enemy : as dusk was closing, he pulled away, after a bad mauling. Another British Convoy went on to its destination, with the loss of only one vessel.

A BRITISH DESTROYER OPENS UP WITH HER GUNS THROUGH THE SMOKE-SCREEN LAID BY OUR OWN SQUADRON: A sudden gale (evidence of which is plentiful in this picture) had sprung up, and the action was fought in a heavy sea. By the employment of smoke-screens our warships avoided serious damage

THE DESTRUCTION OF ONE OF THE ITALIAN BOMBERS: The enemy torpedo-dropper (seen just to the right of centre) is here attempting to escape. One minute later it crashed into the sea



ITALIAN BOMBS FALL NEAR ONE OF THE BRITISH WARSHIPS: Incessant attacks from the air were made on the Convoy, but only one merchant vessel was sunk

As one of the destroyers emerges from the smoke-screen, she fires her torpedoes at an Italian warship

A STICK OF BOMBS FALLS WIDE OF THE ESCORTING WARSHIPS and sends up huge spurts of water

On right—AFTER THE ACTION, Admiral Sir Andrew Cunningham (Commander-in-Chief of the Mediterranean Fleet) comes aboard the Flotilla Leader to congratulate the captains of the destroyers on their splendid performance

b

A SPECIAL TYPE OF CRUISER FOR THE INDIAN OCEAN?

—*A Special* Sphere *Drawing by Wm. McDowell*

Throughout the campaign in the South-West Pacific, and now in the Bay of Bengal, the weight of the Japanese air attack against British warships has been almost overwhelming. Here is a considered scheme for the adaptation of a special "Indian Ocean" type of cruiser for combat against the Jap bombers. The vessel indicated here is a 10,000-ton cruiser, with her armament specially designed to meet intensive air attack. She has been armed with *six* 8-in. guns, as compared with the eight guns now carried in the London class, and these are arranged in two *triple* mountings, so that extra space may be obtained for the A.-A. armament, which consists of twelve 4-in. guns in twin mountings, as well as *six* multiple pom-poms. A large number of smaller machine-guns would also be carried. Eight 21-in. torpedo-tubes are arranged in two batteries of four to port and starboard. A hangar, capable of holding four seaplanes, is at the after end, the aircraft being launched from twin catapults and recovered by two cranes mounted on the hangar. The dimensions and speed of this special type of cruiser would be approximately similar to those of the London class

HOW THE RECENT LESSONS OF THE BAY OF BENGAL MIGHT BE APPLIED: Here is a 10,000-ton cruiser our existing "al

A BRITISH CRUISER AFTER RECONSTRUCTION: H.M.S. "Frobisher," a cruiser of the Hawkins class—the subject of an authoritative note by Mr. McMurtrie herewith

THE RECONSTRUCTED "FROBISHER" AND HER SISTERS:

A Note by FRANCIS McMURTRIE

THIS is the first photograph to be published of H.M.S. *Frobisher* for several years. It is evident that her reconstruction has not followed the lines planned before the war. Prominent new features are a tripod mainmast and a good deal of extra superstructure.

Five ships of this type were ordered in 1915, though only three survive to-day. The *Hawkins*, *Frobisher*, *Cavendish* and *Raleigh* were laid down in 1916 and the *Effingham* in 1917. While still under construction, the design of the *Cavendish* was modified, and she was completed in October 1918 as a light aircraft-carrier, with a main armament of four 7·5-in. guns. She was renamed *Vindictive* to commemorate the exploits of the ship of that name in the Zeebrugge-Ostend blocking expeditions, and has since undergone sundry vicissitudes.

In July 1919 she ran aground at a speed of 15 knots while on a cruise in the Baltic, and was not refloated until eight days later, after discharging weights totalling 2,212 tons. Her frames and plating were badly damaged, and she had to be refitted at a cost of about £200,000 in 1920-21.

It was ultimately decided that she would be of more value as a cruiser, so in 1923-25 she was reconverted to her original design, though the hangar at the base of the foremast was allowed to remain, together with a crane for handling seaplanes.

The *Hawkins* was the second of the class to be completed, in July 1919. Like the rest of the class, she had a displacement of a trifle under 10,000 tons—each of the five varied slightly in this respect—and was armed, like the remaining three, with seven 7·5-in. guns arranged in somewhat novel fashion. Two were mounted forward, three aft and one on either beam, all singly.

When planned in 1915 these ships were intended to be used for hunting down Atlantic raiders, so they were given large fuel capacity. Originally, this was to have been part coal and part oil, but all now burn oil exclusively. Designed speed was 29·5 knots in the *Vindictive*, *Hawkins* and *Raleigh*, and 30·5 knots in the *Effingham* and *Frobisher*, which had slightly greater horse-power than the first three.

For some years the *Hawkins* was flagship on the China Station, but ultimately joined the Reserve Fleet. The *Raleigh*, commissioned in 1921, was flagship on the American and West Indies Station until wrecked in the Strait of Belle Isle, between Newfoundland and Labrador, in August 1922. Her loss brought the number of the class down to four.

The *Frobisher* and *Effingham* were finished in 1924 and 1925 respectively, their construction

whose armament has been reinforced with a terrific anti-aircraft concentration. Such a vessel would be better prepared to meet the heavy Jap air onslaught than purpose" type, which has not proved too good for these particular circumstances

and of the U.S. Minneapolis class—that is, about 600 ft. in length and 64 ft. in beam, and with a speed of 32 knots. It should be noted that a big problem in the increase of A.-A. armament is to find the necessary magazine space, as the rate of fire is so great that the ammunition would be soon depleted unless much stowage could be arranged. For this reason, two of the eight 8-in. guns (as in the London class) have been sacrificed in favour of extra 4-in. A.-A. guns and the necessary magazine space. The hangar and catapults follow the arrangement of those in the U.S. cruisers, which seems to be excellent. The letters in the drawing indicate the following: A—Triple 8-in. gun mountings; B—Twin 4-in. A.-A. guns; C—multiple pom-poms; D—port torpedo-tubes; E—catapults; F—cranes; G—searchlight position; H—hangar

having been slowed down for reasons of economy. Though it spread the expenditure over a greater period, this dilatory rate of building actually resulted in their costing more than the *Hawkins* and *Raleigh*, which averaged £1,671,000 each.

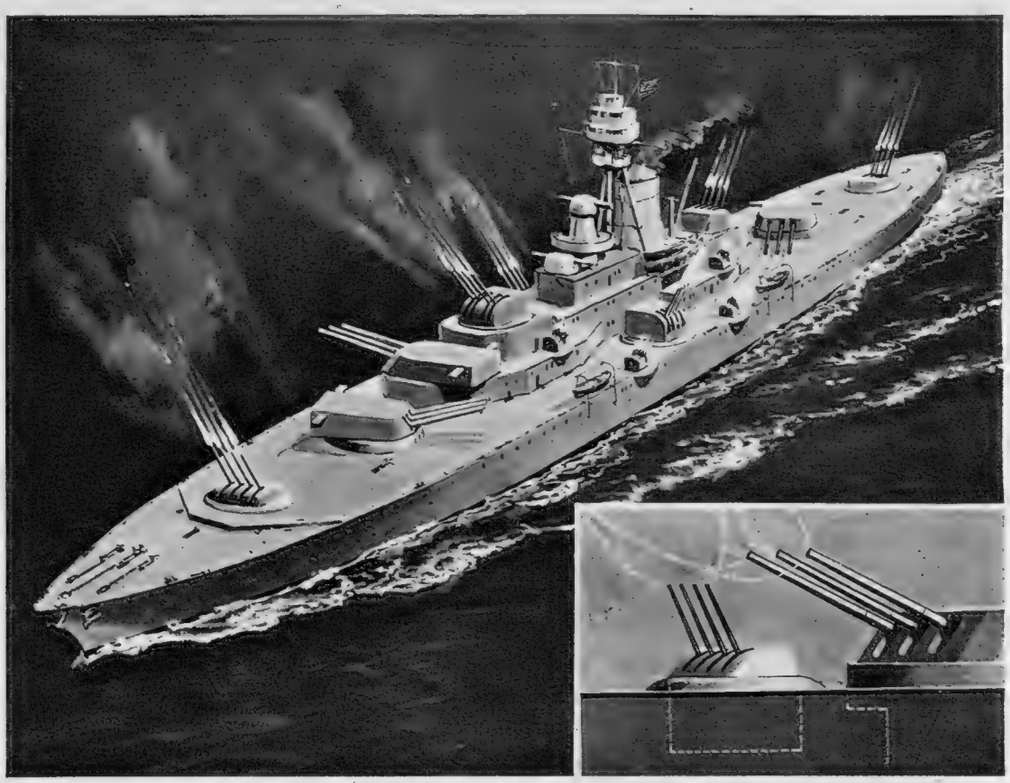
Under the London Naval Treaty of 1930, which limited the number of cruisers with guns of more than 6·1-in. calibre, it would have been necessary to replace all these ships; but instead it was decided, in view of our shortage of cruisers in every category, to rearm the *Effingham*, *Frobisher* and *Hawkins* with nine 6-in. guns in place of their seven 7·5-in. These 6-in. guns would be mounted singly, three forward, four aft and one on either beam.

Actually, the only one of the class to be given this new armament was the *Effingham*. This had the effect of reducing her displacement from 9,770 to 9,550 tons. Her end, though it came in wartime, much resembled that of the *Raleigh*. She foundered after striking an uncharted rock off the Norwegian coast on May 21, 1940.

Yet another transformation was undergone by the *Vindictive*. In 1936-37 she was extensively altered for duty as seagoing training-ship for cadets, her armament being reduced to two 4·7-in. guns, bringing her displacement down to 9,100 tons. Her boilers were reduced in number, so that her speed fell to 23 knots. Thus for the time being she ceased to count as a fighting-ship, the cost involved in the alterations being £280,000.

Prior to this, the *Frobisher* had served temporarily as a cadets' training-ship, for which purpose one of her after 7·5-in. guns was landed and other modifications made.

To judge from the photograph now reproduced, it would seem as though the *Frobisher* now has her original armament of seven 7·5-in. again. Presumably, the *Hawkins* is in similar case, and it would not be surprising to learn that the *Vindictive* has been brought back into the fighting line, since we need every cruiser we can muster to cope with the present crisis.



AN AMERICAN SUGGESTION FOR A BATTLESHIP WITH HEAVY A.-A. ARMAMENT: No conning-tower, no aircraft, no catapult gear—*Drawing by Wm. McDowell*

In the issue of *The Sphere* of November 8, 1941, we published the above drawing. In view of recent events in the Pacific and Indian Oceans, we make no apology for reproducing it again here. When first published, we made the following comments, which seem even more apposite to-day than in November last! "This special drawing shows a development of the U.S.A. Washington type of warship, in which the aircraft, catapult gear and two conning-tower positions have been sacrificed for greater anti-aircraft gun power. In addition to the nine big guns in three turrets, she is shown with two 'counter-sunk' turrets and four others, each carrying four 5-in. guns, also eight multiple pom-poms, each of twelve barrels. The big difficulty to overcome would be arranging for sufficient magazine space to accommodate the enormous amount of A.-A. ammunition needed to supply so many guns. The drawing inset on the right shows a 'counter-sunk' turret mounted under the big guns. As obviously the blast from these might injure the big guns (or vice versa), it would be necessary to train the latter out of harm's way when the A.-A. guns went into action, as shown in the larger drawing. It will be necessary—and the Americans have already discussed the point—to provide very elaborate drainage systems to prevent the water, which is bound to flow over the deck, getting down to the magazines and ammunition-handling rooms under the turret: the colossal amount of ammunition required by the A.-A. guns also demands large magazines well ahead and astern of the normal thick belt protection, which will mean more problems for the extra weight and for strengthening the ends of the ship to support it"

THE BATTLEFIELD OF LIBYA

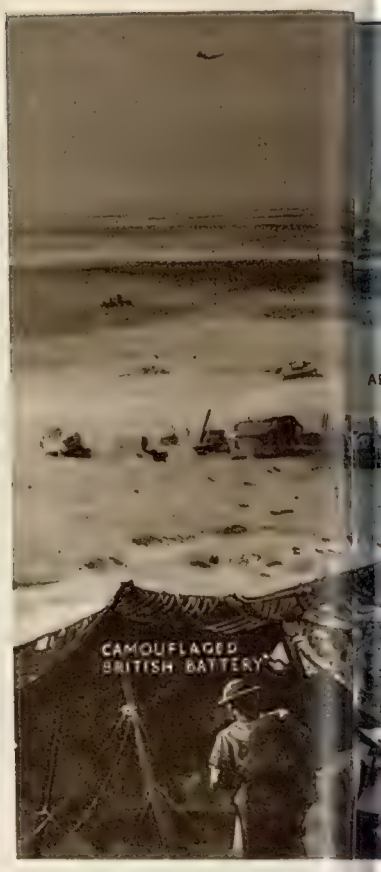
The Present Position in Cyrenaica, and the Heavy Desert Fighting which has Led Up to It

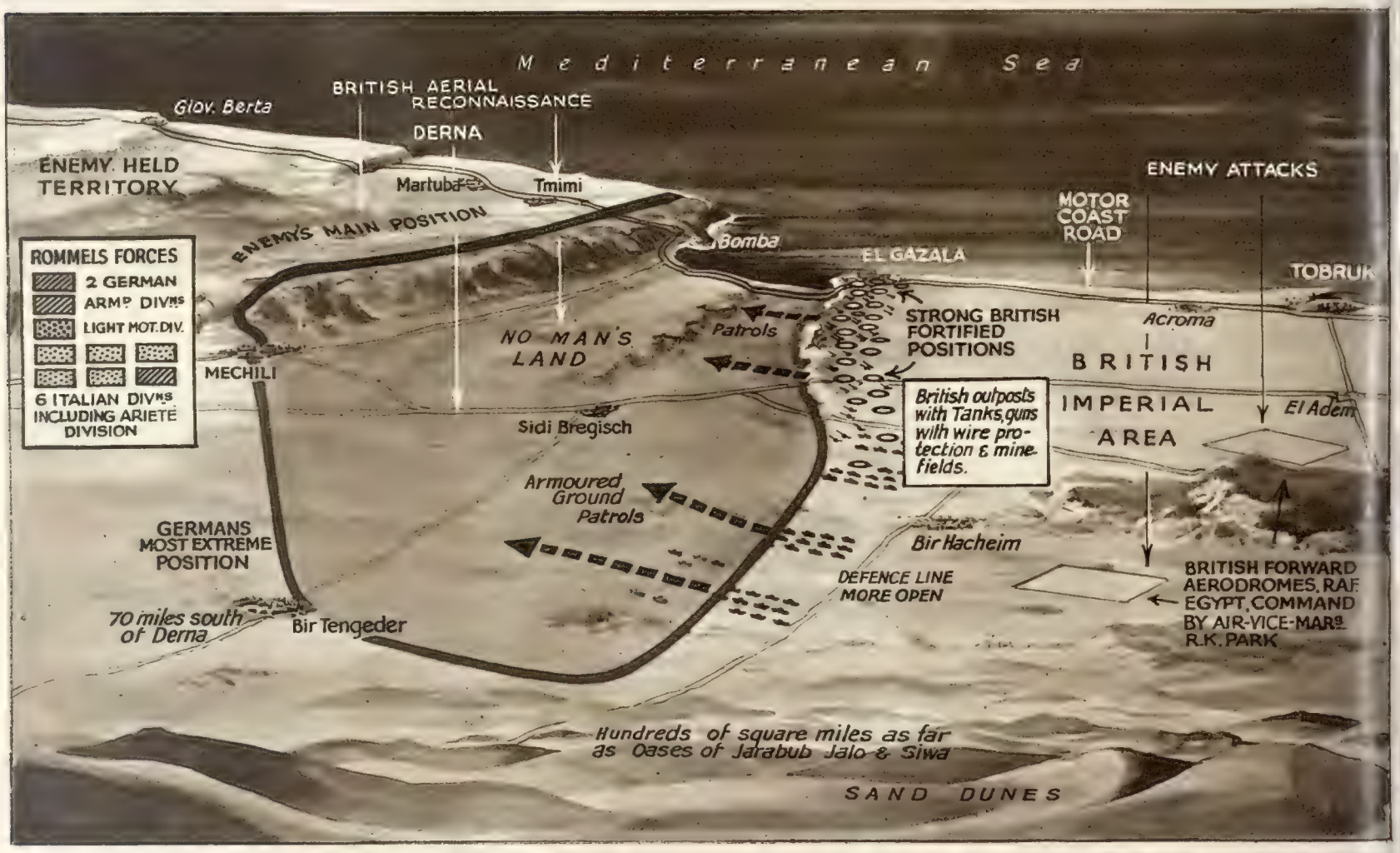
—A Special Sphere Summary

LIBYA has been the battlefield of movement of this war—backwards and forwards the assailants have been pressed as in a tug-of-war. Each in turn has felt the difficulty of long-drawn-out communications, and has been forced to a standstill. Up to the present the honours of the conflict are definitely with the British, who have the break-up of a great Italian army to their credit and the unquestioned possession of a vast number of prisoners. The greater part of Libya being a stony desert, there has been great opportunity for the manœuvring of tanks and troops unhampered by inhabited areas or the horrors of impenetrable jungle, while aircraft could soon procure for themselves a serviceable landing-ground. Weather has been the one great obstacle.

From the moment General Cunningham started the second great British offensive in Libya last November, the weather has been phenomenally bad, breaking all records for the winter season. Deluges of rain, turning parts of the desert into a swamp, fierce gales of wind and

THE G.O.C. OF THE 8TH ARMY LIVES IN A CARAVAN IN THE FORWARD AREAS: Lieut.-General Ritchie is one of the most active men in the Libyan Desert: he lives in a big caravan made out of a Leyland truck, but spends much of his time visiting his soldiers in the forward areas. He uses a special Blenheim aircraft for many of his journeys. The General's chief companion on his travels is his pipe!





THE POSITION OF THE FIGHTING FRONT IN LIBYA AS IN MID-APRIL: The enemy's main positions ran along the high ground from Tmimi to El Mechili, with Derna as their base and Martuba aerodrome as their principal landing-ground. The British line ran roughly from Gazala to the south, with No Man's Land as a rough triangle between. The Germans' most extreme position was at Bir Tengeder, seventy miles south of Derna—*Drawing by E. G. Lambert*

blinding sandstorms hindered the advance and considerably assisted the enemy. Rommel, though badly mauled, was able to withdraw from the net which was spread to capture him, and established himself at the end of December at El Agheila, on the Tripoli road.

All seemed going well for the British forces at the beginning of this year. It was thought that Rommel could not escape except along the coast road to Tripoli, where he would be terribly exposed to attack. Meanwhile, Bardia, which had been left isolated, was captured, and Halfaya, on the Egyptian frontier, which had put up a stubborn resistance, expecting to be relieved, finally surrendered on January 18. Light British advance forces were watching over Rommel while great preparations were being carried out in the rear—depots of material and petrol dumps were being made, and tanks overhauled after their severe fighting. But to the general surprise, three days after the fall of Halfaya, Rommel moved out of his camp and advanced in three columns, north and east. At once there was a fear that the Germans might be going to repeat their success of the previous year when they had swept the British back to the frontier of Egypt. The circumstances however, were different. Though taken by surprise, the British had not been so depleted of strength as in 1941, when they had sent a large part of the troops to aid the Greeks.

Libya is essential to the German military plans, and must be held if any attempt is to be made upon Egypt—therefore Rommel could not wait to be attacked, but he showed considerable caution by not advancing far into the desert. He kept along the coast road and gained a much-desired spot, the aerodrome of Derna, the best in Libya. He had had considerable success in capturing some of our dumps, but the R.A.F. had harassed his transport everywhere. For once the Germans were advancing without the cover of air force.

By February 9 the British retreat ended, and the Indian divisions which had been in Benghazi and had fought their way, with brilliant success, across the hill country of Jebel Akhdar, rejoined the main forces. Rommel drew up a kind of defensive line from Tmimi (east of Derna) to Mekili and Tengeder, while the British stretched out in southerly line from Gazala. There the opposing forces remained, with a No Man's Land between them, throughout the remainder of February, and the whole of March. Rommel made one move, on February 14, with widely-dispersed columns, which looked as if a big forward movement was intended, but the decisive victory by the Kittyhawks in combat with the German planes which were attempting to attack the British forces about Gazala, caused Rommel to retreat, to the hilly district around Martuba. Without loss to themselves eighteen Kittyhawks had wiped out the entire enemy force sent forward as air cover, destroying twenty, and damaging

Drawing by F. D. Blake

THE DESERT AS IT LOOKED FROM THE BRITISH ADVANCED OUTPOST LINE after the fighting in Libya had become static following on General Rommel's advance to the Tmimi-Mechili front: the outlook was one of gravel, dry mud, a little sand and bushes of camel scrub. In the foreground of this view are outposts and observation points, between which field-guns, 25-pounders, two-pounders, Bofors and others are skilfully interspersed, with protecting minefields and wire

THE GERMAN COMMANDER, General Rommel, directs operations in North Africa from the roof of his armoured car

the remainder. Since that brilliant air exploit the armies in Libya have been merely indulging in patrol activities.

In spite of the watchfulness of the Navy and the R.A.F. reinforcements have reached Rommel, though at great cost in personnel and ships. The Italian Ariete Division, which had been so severely broken in the British advance, is now up to strength again. There are apparently six Italian infantry divisions and one Italian armoured division with Rommel, who has his own armoured divisions and about thirty squadrons of aircraft, but, judging from the prisoners taken, the quality of troops is not so good as that of the original Afrika Korps. It would seem that Rommel still waits for reinforcements, which are slow to arrive, and for supplies toiling the long road from Tripoli absorbing precious petrol on the way. He will not waste strength on small efforts, but pile up reserves for a smashing blow. His Mark IV. tanks, the most heavily armed of all tanks, still remain a formidable weapon, if he can collect enough of them. It is significant that Field-Marshal Kesselring, the head of the Nazi

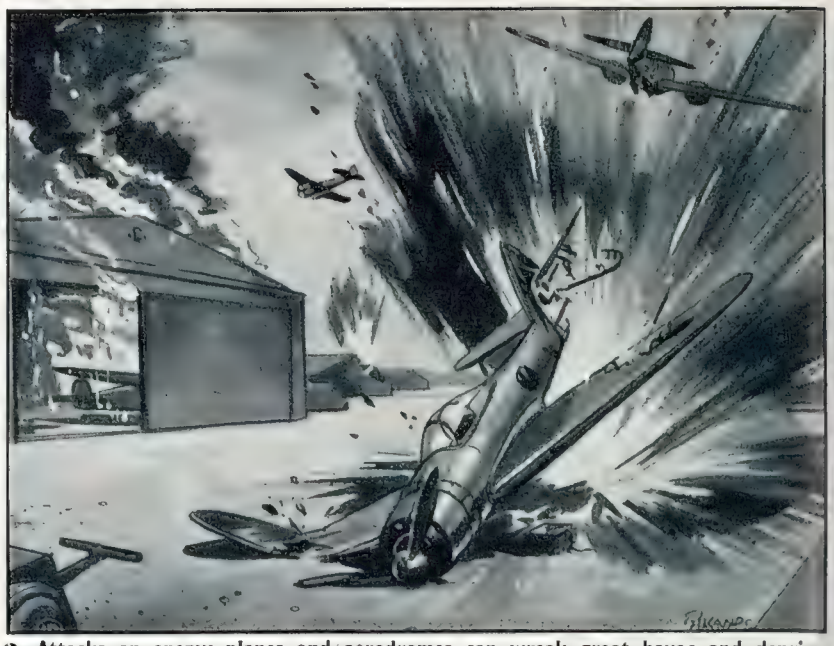
(Continued on following page)

AFTER A BATTLE IN THE DESERT: An overturned armoured car abandoned after an argument with a tank. In the background a disabled fighting vehicle gleams white in the sunshine. All else is desolation—a typical Libyan desert landscape!

AT THE END OF THE ENGAGEMENT: A view taken by an R.A.F. aircraft of a position previously held by the enemy: tanks and armoured vehicles have been knocked out and abandoned, and emplacements have been destroyed by shell-fire. To the right are revealed the graves of members of the garrison

The R.A.F. in LIBYA: What Air Superiority Can Do and What it Cannot Do

POSITIVE RESULTS: 1. Attacks on enemy convoys and docks can prevent supplies from arriving or destroy them after arrival



2. Attacks on enemy planes and aerodromes can wreak great havoc and deprive the enemy of effective reconnaissance during engagements

Air superiority, although conferring a considerable number of advantages on the holder, cannot alone win battles, especially in terrain such as Libya, where rapid movements and dispersal are possible to baffle the attackers. Some of the *positive* virtues of air superiority are shown in the four drawings running across the top of these pages: they include the effective destruction of moving supplies and fixed dumps, and the protection of infantry in battle. In Libya, however, air superiority has not been equally successful in attacks on the enemy's tanks. The misses have been too numerous (and no wonder—with such small targets moving at a good speed!) to prevent the battles going on or reinforcements from arriving. Air superiority may make victory possible: it does not itself secure it

—Drawings by Roland Davies

NEGATIVE RESULTS: 1. Air attacks on tanks are difficult. The number of direct hits on these small targets is not high, and tank battles have continued merrily

TRYING TO HOODWINK THE BOMBERS: A dummy gun emplacement constructed by an Axis garrison in the hope of attracting the attention of R.A.F. bombers. The guns are dummies, and the vehicles are unserviceable lorries and motor-cars which have been added to lend verisimilitude to the picture

"CARPET WEAVERS" OF THE DESERT ARMY: South African coloured troops making nets to camouflage the guns in the front line. They thread coloured tapes through the nets to form intricate and baffling designs

The BATTLEFIELD of LIBYA

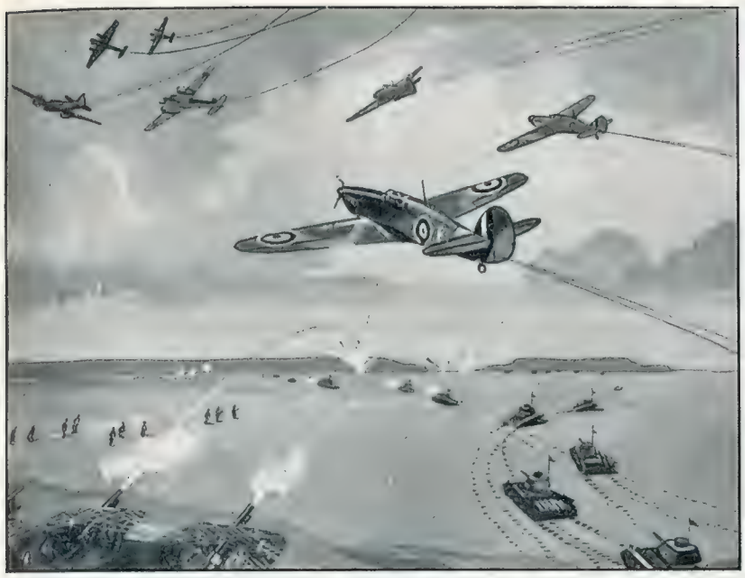
(Continued from preceding page)

Air Force in the Mediterranean area, paid a visit to Rommel in the early part of March. He commands the *Luftwaffe* now stationed in Sicily (said to be one-seventh of the whole German Air Force), which is busily engaged in attacking Malta, and getting ready for the Spring offensive.

The British Eighth Army in Libya, having had time for reorganisation, is now in fighting trim, and ready for either offence or defence. It has the strong-points of Tobruk, Bardia, Sollum and Halfaya in its hands, and superiority in the air. The Long Range Desert Group, that body of picked volunteers who roam the desert, attacking solitary posts and disappearing again, bring in valuable information concerning the enemy, and the Senussi warriors also act as guerrilla bands. These Arab tribesmen were formed into a special force in the summer of 1940, when they eagerly took the opportunity of fighting the hated Italians. Their intimate knowledge of the desert is of great assistance.

During the winter battles on the Libyan Desert it was tank meeting tank, now it is the anti-tank gun which is to be feared. Both sides have prepared new weapons which are said to be very deadly, and likely to master the dominating power of the tank. The Germans now possess a tremendous gun with a tapered barrel 105 mm., giving a great range and power of penetration. The projectile is of such weight that it needs no explosive, and is calculated to knock out anything at which it is aimed. The British guns are also very effective, but though very powerful are less weighty than the German type.

Throughout February the weather continued to be as bad as it could be, continuing the heavy rain, varied by dust storms and bitter winds. Finer conditions began about the third week in March, when it became warmer, and the rain and sandstorms gradually abated. The mud caused by the terrific rain is now hardening and grass and flowers are springing up. Greater activity is now expected and the patrols are busy. The British made a considerable raid upon the enemy on March 20, about Tmimi, where they left the aerodrome unusable, and also at Martuba, where they bombarded the aerodrome. These raids are undertaken to obtain information of possible preparations and to collect prisoners for the same purpose. Rommel may be waiting for a general Nazi offensive in the Middle East when he can throw in his forces with great strength. In the meantime the British are watching all his moves closely and attack any column that moves forward. Artillery duels have been taking place and positions bombed, while infantry, supported by armoured cars, have stormed strategical strong-points.



3. Attack by enemy bombers on ground installations and the strafing of infantry can be frustrated by fast-flying fighter aircraft

4. Bombing the enemy's supply columns along the few main roads hinders his offensive efforts and delays his advances

2. When carrying out bombing raids within the fighting zone, friend and foe alike are liable to be strafed, owing to the inability to see who is who

3. The advance of General Rommel from Jedabia was not stopped, despite that the enemy had little or no support from his own Air Force

THE GERMAN-ITALIAN METHOD OF ANTI-AIRCRAFT DEFENCE: At various points around their desert fortresses, the enemy constructed a number of positions such as the above, with a stone breastwork. Under accurate artillery fire, and aided by aerial bombing, it was not difficult to destroy these nests

THE BRITISH "M.L." WHOSE FIGHTING POWERS ARE NOW WELL KNOWN TO THE ENEMY! These are the very fast vessels—destroyers in miniature—which h
including Bofors gun and gun-turrets, and are capable of speeds of 40 knots and over. This picture shows one of them engaging German ba

The "M.L." (of which we published a complete series of photographs in our issue of March 21), has now been allowed by the Admiralty to take a bow as an E-boat destroyer—one of the principal functions for which it was, in fact, designed. They are very fast little craft, capable of 40 knots and over: in the distance, or in misty weather, they might be mistaken for destroyers, so closely do they duplicate the outline and proportions of their big sisters. The gunboats do not, however, carry heavy guns or torpedoes: their armament is powerful, but light, all the guns being of the quick-firing type. The biggest of these is the Bofors gun, mounted on a circular table at the stern; the others are of the pom-pom type, one of which is mounted in the bows and others in little circular "turrets" which,

h[illegible] been waging war against the German E-boats in the now-famous "E-Boat Alley" off the East Coast of Britain. They carry a very powerful offensive armament, an[illegible]oats and hostile aircraft at one and the same moment—*Drawing by Montague Dawson.* (Below is a photographic impression of an "M.L." at speed)

from a distance, look like stubby funnels. A small supply of depth-charges has also been added, for operations against submarines. The built-up bridge is of light construction; but the heads and shoulders of the officers seen above the bridge seem almost too large for the vessel!

The chief area of operations for these fine little craft is off the East Coast of Britain, and right up to the Dutch and German coasts. This covers the Channel known as "E-Boat Alley," through which merchantmen proceeding north and south in the North Sea have to pass. To judge from reports to hand, the new "M.L." is proving more than a match for its German counterpart

PIGEONS of the R.A.F.

Carried by the Long-range Flying Boats for Use in an Emergency

TO-DAY, in the R.A.F., 500,000 homing pigeons are being used for operational work. Of this number, 2,000 birds are on duty daily with Coastal Command, ready to carry messages from long-range reconnaissance aircraft when circumstances demand that the radio shall remain silent.

At first a large number of trained birds were obtained from civilian sources, but now a very large proportion have been born and bred in the Service. The big flying boats always take a number of them when setting out either on patrol or on some special mission. They are housed in wicker containers, with a flap at the side through which the birds are released. The stronger of them can fly a couple of hundred miles back to the base with ease: one was recorded a short time ago as having flown 175 miles in a gale at the rate of twenty miles an hour—which is considered to have been an excellent piece of work.

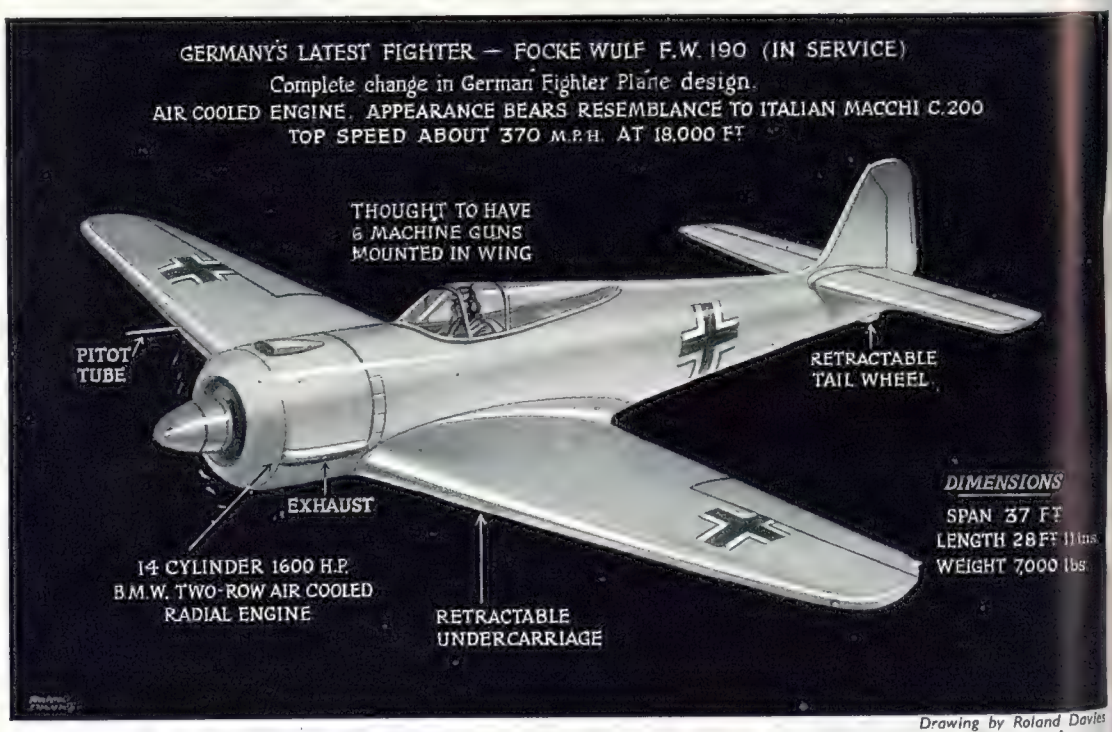
In fighting their way home, the pigeons often show remarkable tenacity: one, released from an aircraft at 13,000 ft. in clear weather above a blizzard off the Scandinavian coast, found the altitude uncomfortable. The pigeon dropped like a plummet to 1,500 ft., at which height it is accustomed to fly. When the bird disappeared into the blizzard below, the pilot of the aircraft gave it up for lost. But three days later, the pigeon returned to its base. It had fought its way across the North Sea in blinding snow and a roaring north-westerly gale.

And here is another story, of a rescue by homing pigeon: the crew of four of a Beaufort aircraft of Coastal Command, forced down into the North Sea, owe their rescue partly to a pigeon known as "Winkie," one of two pigeons carried. When the aircraft was forced down, the wireless operator got out the tin pigeon-container. "Winkie" had broken out; the other, sent with a message attached, failed to report. The base had meanwhile picked up a weak call sign, giving a vague indication of the position of the crew in their dinghy—the aircraft having sunk very quickly—but the arrival at her loft of "Winkie," wet and oil-clogged after a 100-mile flight in bad weather, enabled calculations to be made which narrowed considerably the area of the search. The crew were eventually located and taken aboard by an R.A.F. high-speed launch.

Recently another pigeon struggled back to its loft at a Royal Air Force station wounded in the head and wing. It died soon after reaching home. Unfortunately, this was only one of a number of similar casualties among Service pigeons. During the wood-pigeon shooting season as many as 100 homing pigeons are destroyed every week by inexperienced sportsmen.

No pigeon-shot of experience would mistake a homing pigeon for the wild variety. The flight of a homing pigeon is straight and fast; that of a wood-pigeon slow and erratic. Persons indulging in the sport of pigeon-shooting would do well to bear this in mind: the destruction of a homing pigeon may result in the death of the crew of some reconnaissance aircraft forced down in the sea while policing the ocean trade routes against marauding U-boats and the murderous attacks of enemy aircraft.

RELEASING HOMING PIGEONS FROM A CATALINA FLYING BOAT which is being forced down owing to engine trouble. The birds have been released from one of the gun "blisters," and will carry back the messages clipped to their legs. Several hours must elapse, however, before the plight of the crew will become known at the base, as the pigeon's speed is so comparatively low—*Drawing by Montague Dawson*

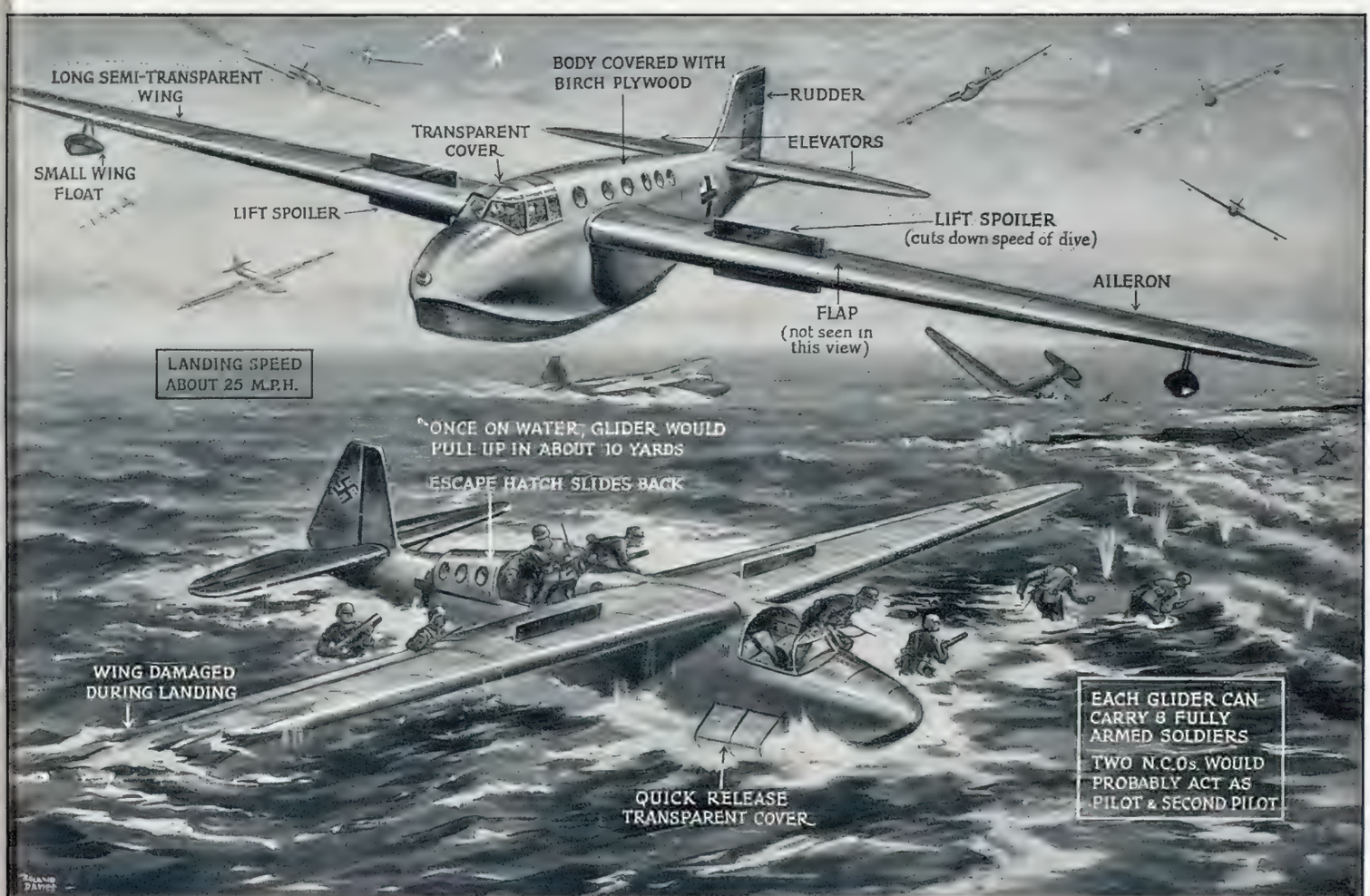


Drawing by Roland Davies

GERMANY'S LATEST FIGHTER, THE FOCKE-WULF F.W.190, whose top speed is stated to be 370 m.p.h.

This latest acquisition of the *Luftwaffe* was first reported to be in action over France in the Autumn of 1941: it has since been encountered a number of times by the R.A.F., suggesting that many of them are now in service. The F.W.190 has a 14-cylinder engine of 1,600 h.p., which is stated to give a speed of 370 m.p.h. at its operational height of 18,000 ft.: it is further thought that the new aircraft has a service ceiling of 38,000 ft., and a range of action of over 500 miles. The new Focke-Wulf is thought to have six machine-guns mounted in the wings, and its weight is 7,000 lb. (or nearly 3 tons). Our own Spitfire is regarded as superior in combat manœuvres and in fire-power—and the same is true of the well-tried Hurricane

RECONNAISSANCE AIRCRAFT OF THE R.A.F. MAINTAIN A CONSTANT VIGIL OVER THE OCCUPIED COAST: During their daily flights over the enemy waters and enemy coastal areas, our pilots on reconnaissance see many interesting sights, not all of them connected with war activities. During a recent North Sea patrol one pilot witnessed this unusual scene—of a line of fishing-vessels off the Danish coast trying to cut their way through the tightly-packed ice-floes of winter



THE NEW SEA GLIDERS ON WHICH GERMANY IS NOW SAID TO BE CONCENTRATING: Here is an attempt to visualise such aircraft alighting in shallow water for invasion. Each glider can carry eight fully-armed soldiers—*Drawing by Roland Davies*

Germany is said to be constructing gliders in very great numbers. Where they are going to be used is open to conjecture; but readers need hardly be reminded that the invasion of Crete proved the practical worth of such aircraft: although many of them crashed, large forces of infantry were transported safely, complete with full equipment—including mortars! Amongst the gliders being constructed for the German Army are some types designed for landing on water. The object, presumably, is to come down within wading distance of the shore, enabling the troops to make a dash for the coast.

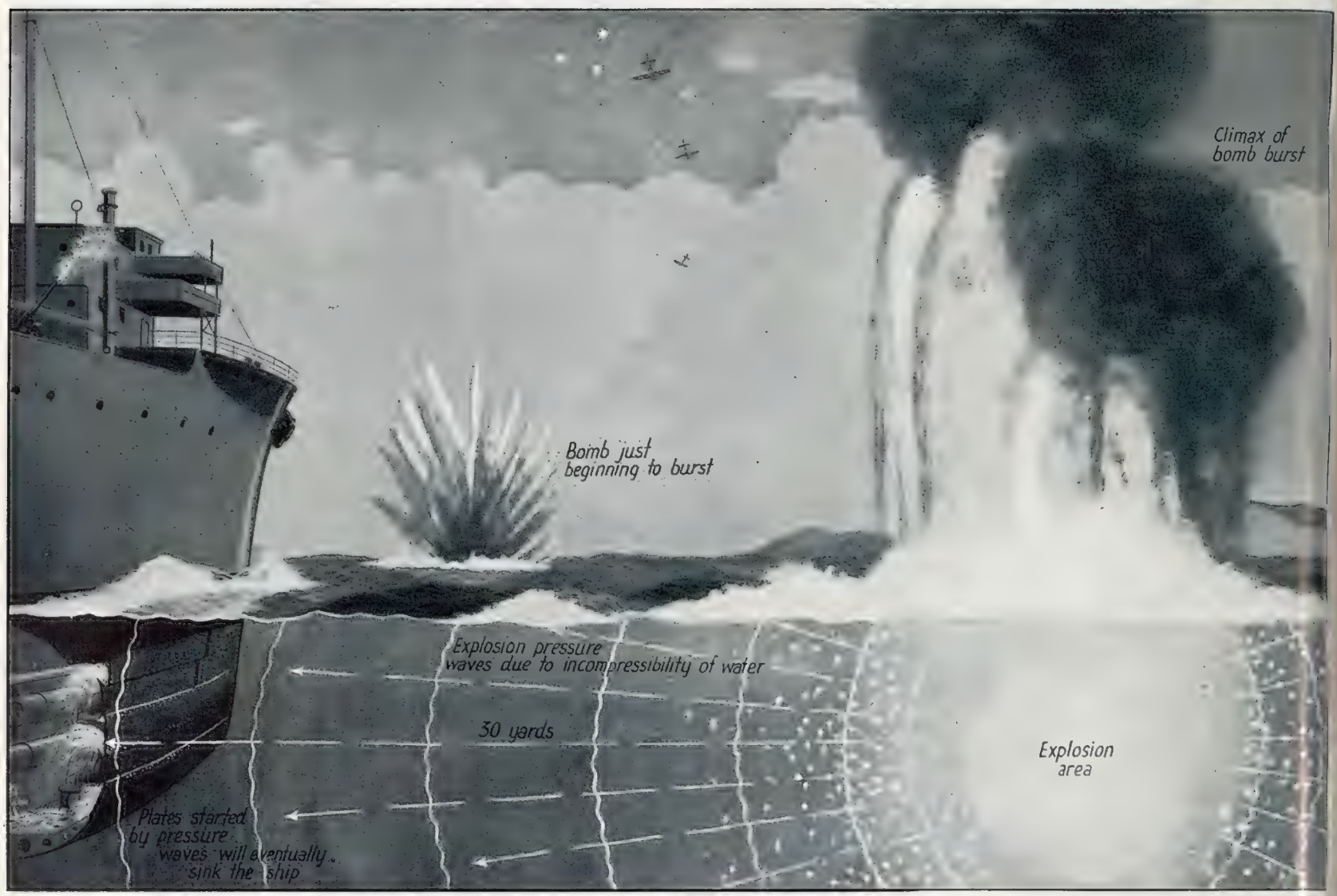
Generally, troop-carrying gliders are towed about six at a time behind a powerful plane, and released at a suitable distance from their objective. If released high enough, and given good weather conditions, a glider can travel a great many miles. One of the greatest advantages of transporting troops by this means is that their approach would be completely silent.

The type of glider now being built by Germany may be larger than the types used in the past, but owing to the risk of crashing it is unlikely that they will carry more than a dozen soldiers in each. The gliders would probably be piloted by a N.C.O., whilst another N.C.O. would act as second pilot. Easy escape hatches would be used for quick exit. What happens to the glider on landing would not be of great concern, so long as the troops were uninjured. The weight of a troop-carrying glider is about 2,000 lb., with a landing run of about 8 yards and a landing speed of about 25 m.p.h. The long wings are semi-transparent against the sky, a point which makes it difficult for them to be seen in the air.

An interesting detail of construction is the "lift spoiler" shown in the *above* drawing. This controls the sinking speed, which is an important factor when the glider is coming in low to land: the "spoiler" also cuts down the speed in a dive.

A glider carries a certain number of instruments aboard, including an altimeter, compass, turn indicator and variometer.

THE DESTRUCTIVENESS OF "NEAR MISSES" as Evidenced by the Sinking of the U.S. Aircraft-Tender "Langley" Under Attack by Japanese Bombers in the Indian Ocean



A "NEAR MISS" BY HEAVY BOMBS MAY BE MORE DANGEROUS TO A SHIP THAN A DIRECT HIT! This drawing shows the explosion "pressure waves," set up owing to the incompressibility of water, which are so deadly to the vulnerable plating—*Drawing by L. Ashwell Wood*

The U.S. aircraft-tender *Langley* was recently sunk in the Pacific by "near misses" from Japanese bombs. Water, being incompressible, conveys "explosion waves" for considerable distances, and a "near miss" by, say, 30 yards, is often sufficient to open up seams in a ship's plates which will flood her below the water-level and eventually sink her without a direct hit being scored

On February 27 the U.S. aircraft-tender *Langley* was sunk by Japanese bombers in the Indian Ocean—but not by bombs! Her sinking, in fact, has demonstrated in notable fashion what has long been known to naval commanders—that in certain circumstances "near misses" can be even more dangerous than direct hits, strange as this may seem! The large drawing reproduced *above* shows why this should be so.

In the attack on the *Langley*, after being spotted by a single Jap reconnaissance plane, nine bombers from Bali came over. Their bombing was accurate, the first being a direct hit. "Each enemy plane was 'dripping' single bombs," wrote Mr. George Weller, the well-known Correspondent, "and, although no other direct hits were made in this first attack, it was once more proved that 'near misses' in naval bombing are even more potent than direct hits, because, while the latter may cause flames, 'near misses' open a ship's

THE NEW DIVE-BOMBERS OF THE U.S. ARMY, which went into action for the first time at Bali: These are designated as the A-24; they are two-seat, single-engined, all-metal Douglas aircraft. Their first action was during the Battle of Bali in February, where they took part in the running fight with one of the Japanese invasion fleets crowding the South-west Pacific, and seriously damaged a Jap cruiser

THE NEW UNITED STATES NAVY HIGH COMMAND: A picture taken on March 26 at the Navy Department in Washington when the following attended a conference: from left to right—Rear-Admiral John H. Newton (Sub-Chief of Naval Operations); Vice-Admiral Frederick J. Horne (Vice-Chief of Naval Operations); Admiral Ernest J. King (C.-in-C. of the U.S. Fleet and Chief of Naval Operations); Vice-Admiral Russell Willson (Chief of Staff to the C.-in-C.); and Rear-Admiral Richard S. Edwards (Deputy Chief of Staff to the C.-in-C.)

DURING A NAVAL ACTION WITH THE JAPS IN THE PACIFIC: The man on the right (with his gold-braided cap on back to front) is the captain of a U.S. warship, part of a "Task Force" of the Pacific Fleet, during an actual engagement with the Japs: he has stuffed his ears with cotton wool to protect them from injury during the heavy gunfire. The two officers with him on the bridge are pilots of the U.S. Navy, equipped for action

THE SINKING OF THE "LANGLEY" UNDER AIR ATTACK OFF JAVA: The captain of the U.S. vessel attempted to lighten her by pitching a large number of the planes stored on the deck into the sea—*Drawing by W. G. Whitaker*

seams below the water-line. Tremendous spires of water rose all round the ship, the nearest being less than 30 yards away." What happened as a result of the attack is further shown in the two drawings by Mr. Whitaker reproduced here. It must be emphasised that the *Langley* was *not* a carrier, but an aircraft-tender. She was, in fact, purely a transport vessel, and not a single fighter could take off from her flight deck (part of which was, in fact, removed some years ago). The survivors of the *Langley*, nearly 500 in all, were taken off by two United States destroyers, one of which sent a torpedo into the *Langley* to sink her.

THE END OF THE "LANGLEY": Her flight deck awash, two U.S. destroyers take off the 500 survivors to Christmas Island, in the Pacific. The aircraft-tender, a vessel of 11,050 tons, was sunk not by bombing, but by "near misses" which opened up her seams below the water-line—*Drawing by W. G. Whitaker*

THE INVASION TACTICS OF THE JAPANESE

Outlined in Diagram Form for the First Time in Full Completeness—with Other Drawings of Japanese Tactics in the Air

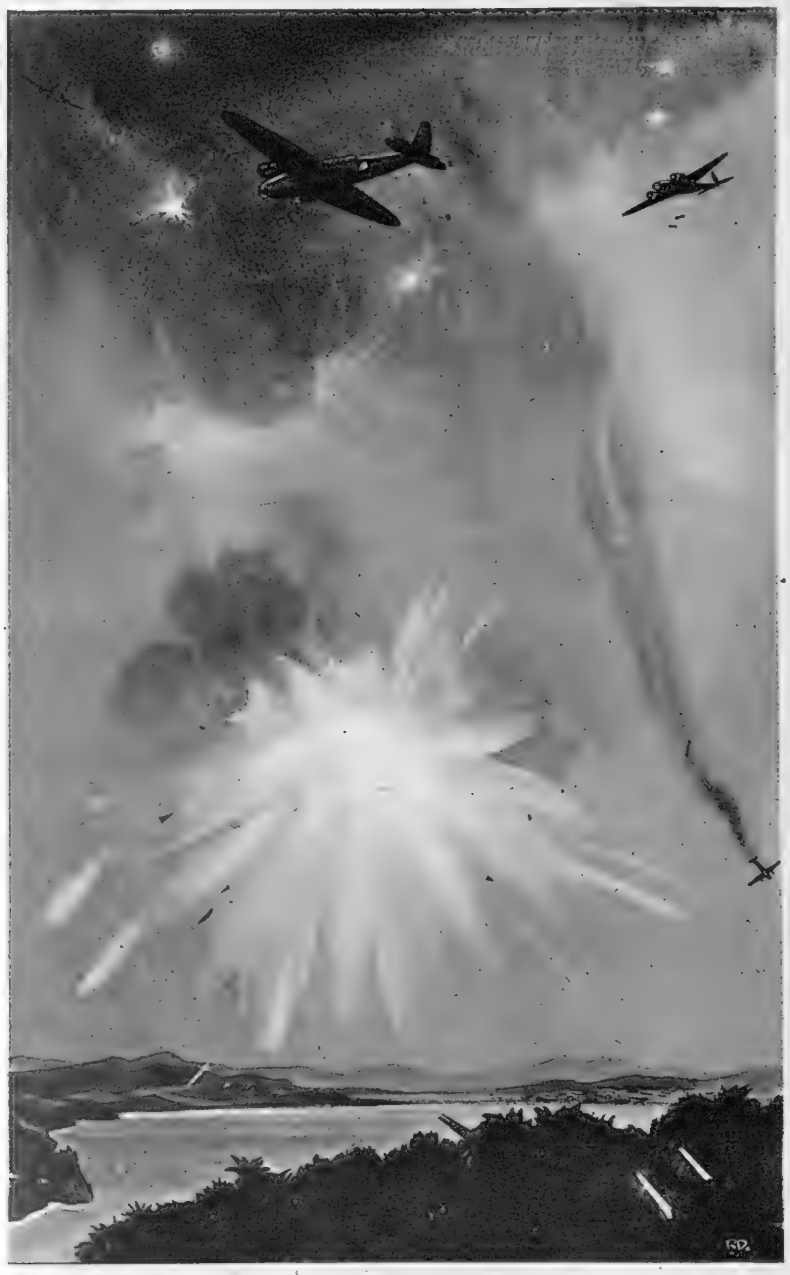
Japan's technique of invasion, which has paid such large and handsome dividends in the South-West Pacific, has been precise, very carefully prepared and efficiently carried out. A few weeks ago the United States War Department released details of the Japanese method as displayed in the Philippines. These proved, in the words of one commentator, that "the U.S. has to overcome something more than superiority of numbers in the Pacific."

For invasion from the sea, it is now demonstrated, the Japanese choose beach areas which are about five miles in length. Half a mile off the selected landing spot, they place their destroyers. Three miles behind the destroyers a cruiser or a battleship takes station. Between the light and heavy warships are transports; and, in addition, an aircraft-carrier is nested in their midst.

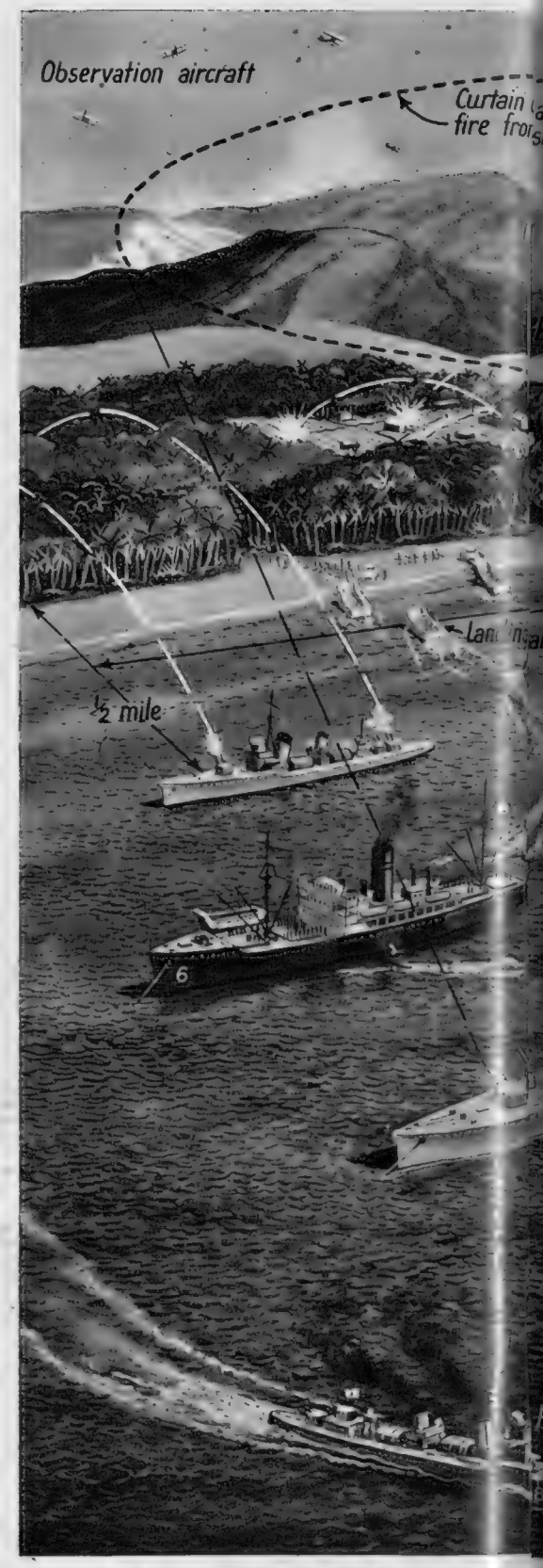
Anti-aircraft guns from the naval vessels curtain the sky just above the ships, and also the intervening space between them and the beach. Above this steel ceiling of concentrated fire, observation and fighter aircraft maintain their ceaseless patrols. Below, from skilfully designed mother-ships, barges laden with troops and equipment, are launched into the sea, ready to push off as soon as they touch the water.

These barges, in the Philippines, varied in type: some were twin-keeled open boats, carrying from 110 to 120 armed men. The barges had bow flaps which became runways for light artillery and tanks, with V-shaped hulls to deflect fire from the defenders on land.

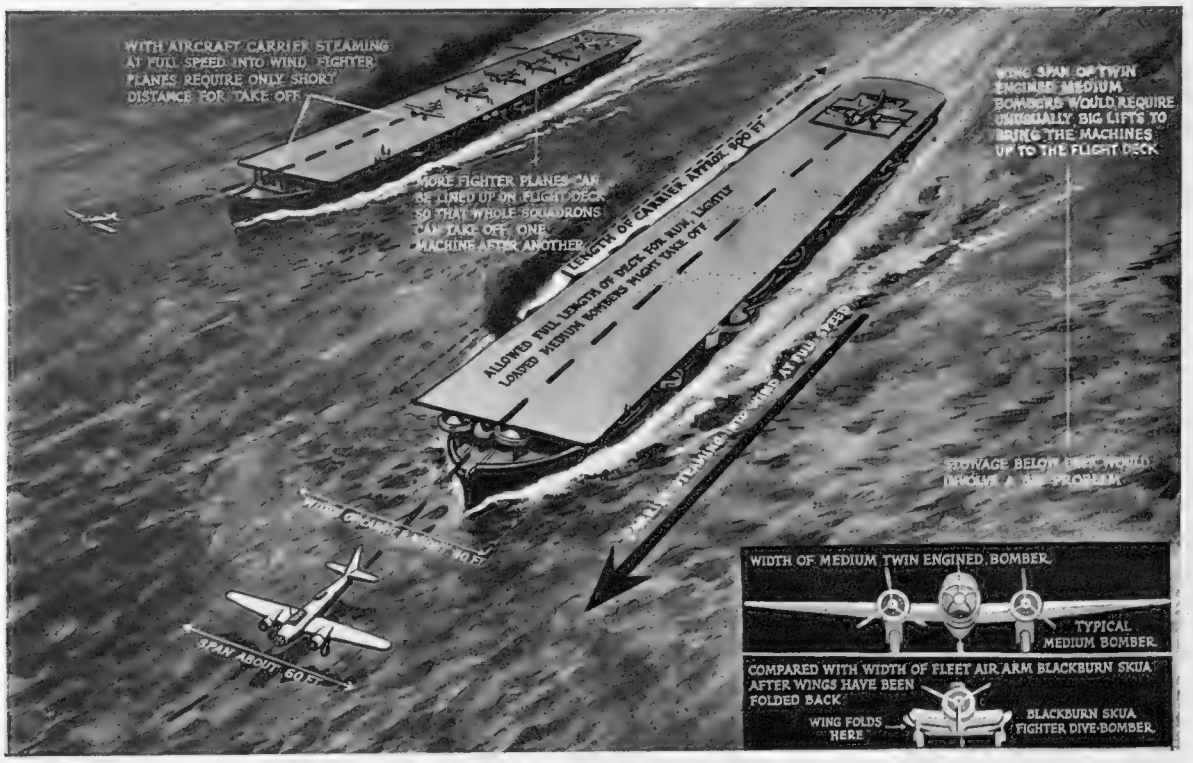
When making an invasion, the Japanese infantry discard the heavy, encumbering type of arms for light automaticweapons and grenades. Ahead of the troops, the destroyers close inshore drop a preparatory barrage to clear the beach for the foot soldiers; the guns are fired from their maximum elevation, lobbing the shells on to the beach. Fired in this manner, the guns cause greater destruction than would be the case with the normal, flatter trajectories. In effect, the Japs use their destroyer batteries as land armies would use howitzers or mortars



THE JAPANESE MAKE USE OF A NEW "FLAME BOMB"—*Drawing by Roland Davies*
Reference to a new type of bomb used by the Japanese in the Philippines was recently made by the U.S. War Department. These were different from those used on previous days and "they burst in the air with huge flames, some exploding high up." The exact purpose of these is not altogether clear: one explanation is that they are a type of incendiary; another, that they are probably similar to a bomb used over Britain by the Germans earlier in the war; and, still another, that they are being used for the purpose of deciding the range and fixing the detonators

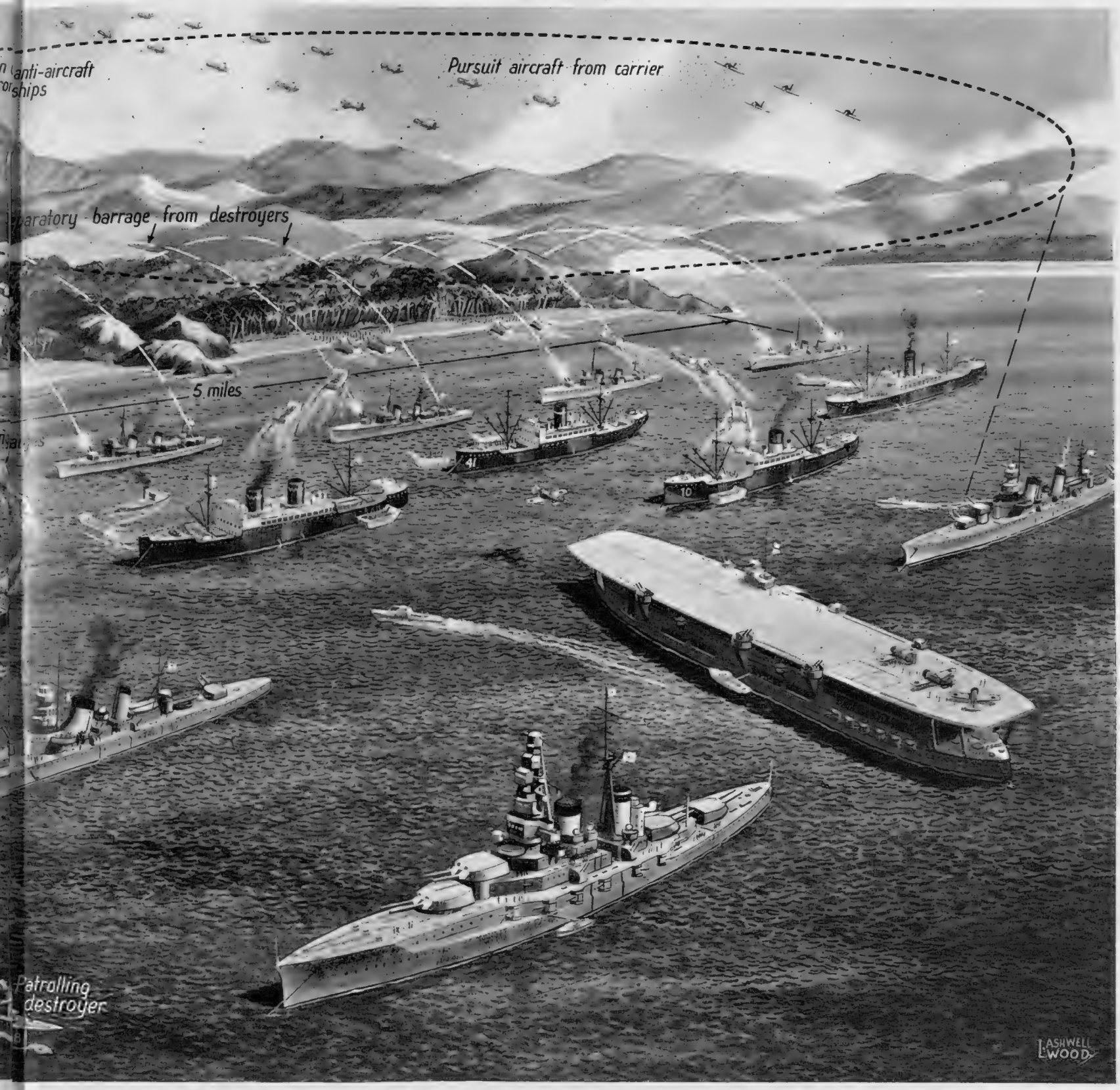


BEACH AREAS ARE CHOSEN FOR INVASION WHICH howitzers for laying a preparatory barrage. in among the many vessels. Anti-aircraft above ships and beach; whilst above the patrol. The landing barges are slipped transports. Note in the above drawing into wind at both bow and



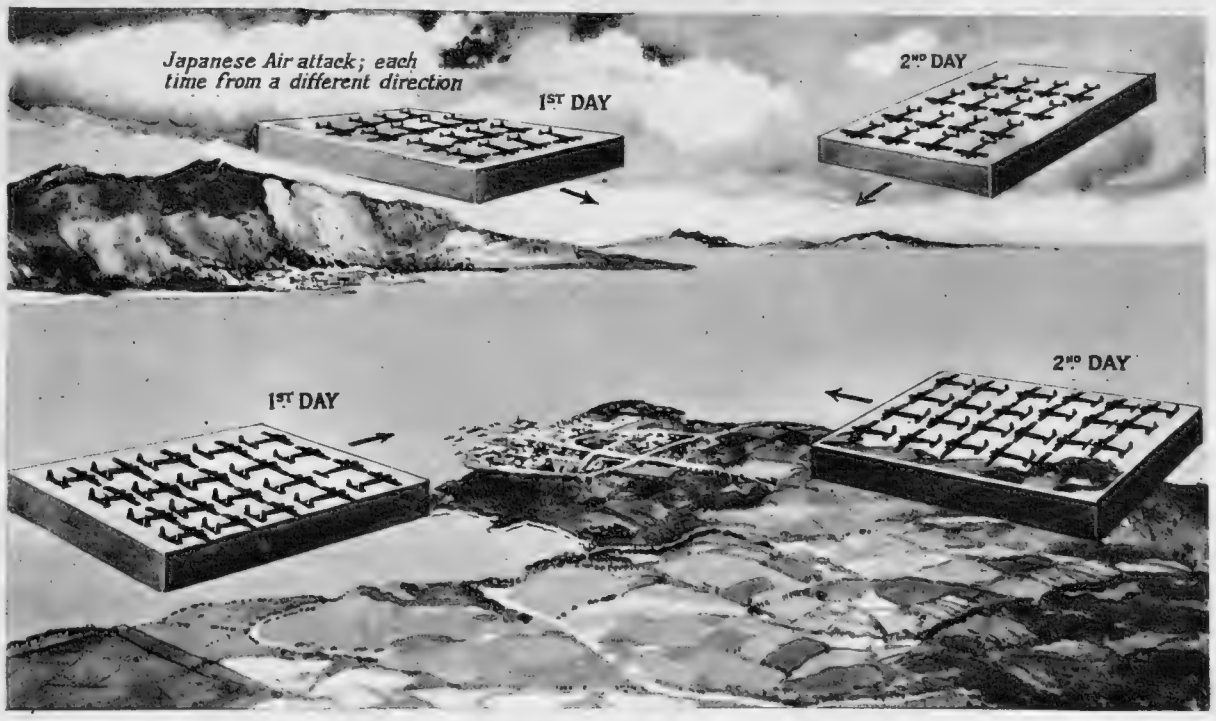
On left—**THE JAPANESE EMPLOYED FIGHTER DIVE-BOMBERS FOR THEIR ATTACKS ON THE CRUISERS "DORSETSHIRE" AND "CORNWALL," sunk in the Indian Ocean: This picture shows how such a thing has been made possible by the enemy**
[*Drawing by Roland Davies*

It has been reported from the Bay of Bengal that torpedo-droppers were not responsible for the sinking of our two cruisers recently, but that this feat was accomplished by "fighter dive-bombers." It has also been stated that this is "the first experience we have had of dive-bombers being operated from aircraft-carriers": but this last statement is not correct, inasmuch as during heavy raids on Port Darwin, in Australia, it was assumed that some, at least, of the big twin-engined bombers employed on those occasions must have been based on aircraft-carriers—especially as they were, on occasion, escorted by fighter aircraft. The drawing reproduced here shows how such huge aeroplanes as bombers could be operated, despite their size, from a flight deck. The bomber needs a long run to take off, and there is also the problem of stowage and lifting on to the flight deck. Providing that the carrier is steaming into the wind, light planes of the fighter



ARE ABOUT FIVE MILES LONG. Half a mile off these, the destroyers take up station to pound any resistance from the land with all their guns, using the latter like Three miles behind the destroyers come the cruisers, or a battleship, or both. Between these warships, the transports take station, with an aircraft-carrier nested guns from the warships curtain the sky barrage, observation and fighter planes into the sea from the specially-constructed that the aircraft-carrier has been anchored stern—*Drawing by L. Ashwell Wood*

class require only a short length of deck for a take off, and therefore a number of machines can be on deck at once and take off in numbers. In the case of bombers the whole deck would be required, and after each plane took off, the business of bringing up the next machine would have to be undertaken. If the bombers have to return to the carrier, a very comprehensive landing routine must have been evolved



On right—**AN ARTFUL DODGE OF THE JAPANESE BOMBING SQUADRONS**—
Drawing by H. P. Burton

It has been noted by many competent observers, and in many different theatres of war in the South-West Pacific, that Japanese bombing squadrons make a point of never coming in for a second bombing attack from the same direction as the first. This was especially noticeable at Port Darwin, where long detours were made—presumably to throw the anti-aircraft defences off their guard. If four attacks were made on successive days, so would the angle of approach be varied, as indicated in our drawing

A NEW POLISH ARMY APPEARS: How it has reached Teheran from the Tashkent area, and the present position of the civilian population expatriated from Poland to beyond the Urals

The POLISH ARMY in PERSIA

Big New Formations which are Now Preparing to Aid the Allies in the Middle East

ONE of the most remarkable of the recent developments of the war has been the change in the condition of the 1,500,000 to 2,000,000 Poles, who were expatriated when Russia partitioned Poland with Germany, after the latter had overrun the country as far as Warsaw. The intelligentsia and well-to-do classes were removed to parts of Russia east of the Urals. There they might have remained indefinitely but for a turn of Fortune's wheel which brought Poland into a relationship with Russia which was possibly as unexpected as it was at first embarrassing.

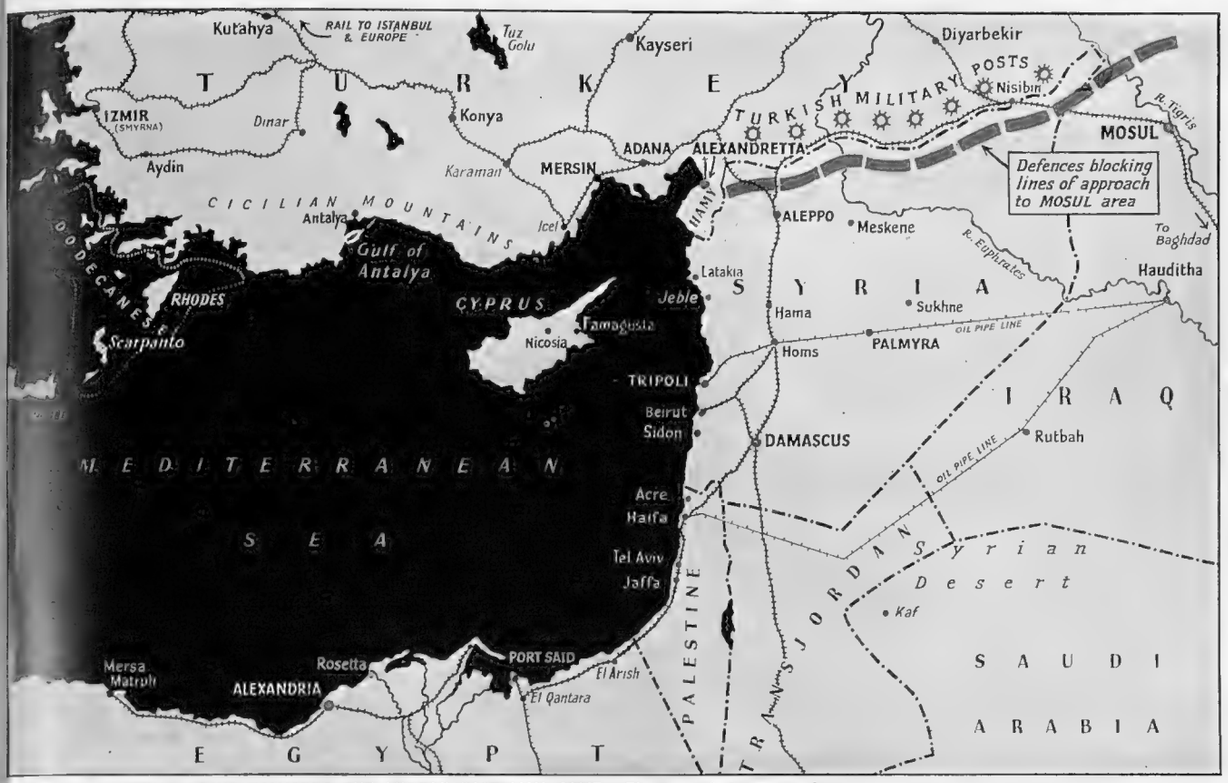
After his return from Russia, General Sikorski gave details of his talks with the Soviet leaders. He said that M. Stalin had agreed that the Polish Army in Russia, originally projected as two divisions, should be increased to a strength of six divisions; that 25,000 Polish soldiers should leave the U.S.S.R. to complete the Polish Army Corps in the Middle East; and that 2,000 Polish airmen should leave for service outside Russia. Britain and the U.S. were sending equipment for the six Polish divisions in Russia. There were from 1,500,000 to 2,000,000 Poles, men, women and children, in the U.S.S.R., many in remote places difficult to reach in winter, and M. Stalin had promised that they would all be given temporary settlement in the warm fertile district between Tashkent and Alma Ata.

Previously it had been announced in Moscow that an agreement had been signed at Kuibyshev under which the Soviet Government granted a loan of 100,000,000 roubles to Poland for the assistance of Polish citizens on the territory of the U.S.S.R. The arrangement announced above began to bear visible fruit last week, when some of the early sections of the new Polish Army swung into the streets and squares of Teheran. They came from the north, fully equipped with battle-dress and tin helmet (all supplied by Britain). The Polish forces included tank troops, airmen, guards and even A.T.S. girls. They came 1,000 at a time to the number of 50,000: another huge group is expected soon; and the total number of Polish soldiers expected in the Middle East will, it is thought, reach four divisions — almost 80,000 men.

THE POLES, FULLY EQUIPPED BY THE BRITISH, enter Teheran from Russia: Great numbers of these soldiers are now arriving in Persia in lorries and on foot from Tashkent, in the U.S.S.R. Polish A.T.S. girls are also included in the new Army—*Drawing by W. G. Whitaker*

INDIAN MULE-PACK COMPANIES FROM THE HILLS OF NEPAL are now in the Middle East: A detachment of pack-mules is here seen passing through a village in the Lebanon region of Syria

THE LITTLE HILLMEN FROM NEPAL: Several Indian mule-pack companies are operating in the Middle East, their essential function being to carry supplies through mountainous districts. In the Lebanon they carry materials for defence works and new mountain roads. The members of these companies are Kumauois and Garhwalis, hillmen from the Nepal and Tibet borders. All Brahmin or Rajput, the highest castes in India and fighters for generations, in peacetime they are small farmers. Each man has two mules to look after, either pack or draft



WHERE THE SPRING DRIVE TOWARDS THE MIDDLE EAST MAY COME: The guarded approaches to Mosul, where the British lines face the Turkish frontier-posts

On left—After two and a half years of war, the Nazi machine must be sadly in need of fresh supplies of oil, for lack of which the machine will surely run down quickly! If Hitler's eyes have, in consequence, turned towards Mosul, in Iraq, he will find that the road has been barred. Not only have troops in good numbers been sent to reinforce our positions (in addition to the Poles—as reported on the facing page), but defence works have been erected all over the area which would be affected by any eastward push.

Thousands of Arabs and a contingent of Basutos have been employed in these tasks, and the strength of the new posts is now very considerable.

Mosul, the centre of one of the world's most productive oil-fields, lies within a short distance of the Turkish frontier, but a considerable distance from the Mediterranean coast. Therefore, to counter any thrust which may come through Turkey, our main defensive positions have been erected along the border in approximately the area indicated in the accompanying map.

A NEW BACKDOOR ROUTE TO RUSSIA

By Maj.-Gen. A. E. DAVIDSON, C.B., D.S.O.

ALTHOUGH without a railway system until quite recent times, Persia has always been proud of her great highways. Through this region, in fact, runs one of the oldest and most historic of all routes—that of Alexander the Great, the Caravan route, the Trader's route, the Conqueror's route important back-door lorry link in the chain of supplies to Russia. The road is rough in parts, very sandy in others, and difficult where big soling stones jut up at all angles to each other. Water is available at reasonable intervals along the route.

Duzdab is 4,500 ft. up; at Safadawa there is medicinal water and petrol supplies; Shusp is a nice-looking village with safe water—it was the site of a British hospital in the last war; Birjund is 286 miles from Duzdab; Turbat-i-Haidari another 210 miles; and Meshed a further 90 miles.

Broadly speaking, the country is red and barren, but traversed at intervals by

SUPPLIES START OUT TO RUSSIA: Six hundred tanks leaving a large Ordnance Depot in England. On the right another consignment is being loaded for departure on the following day

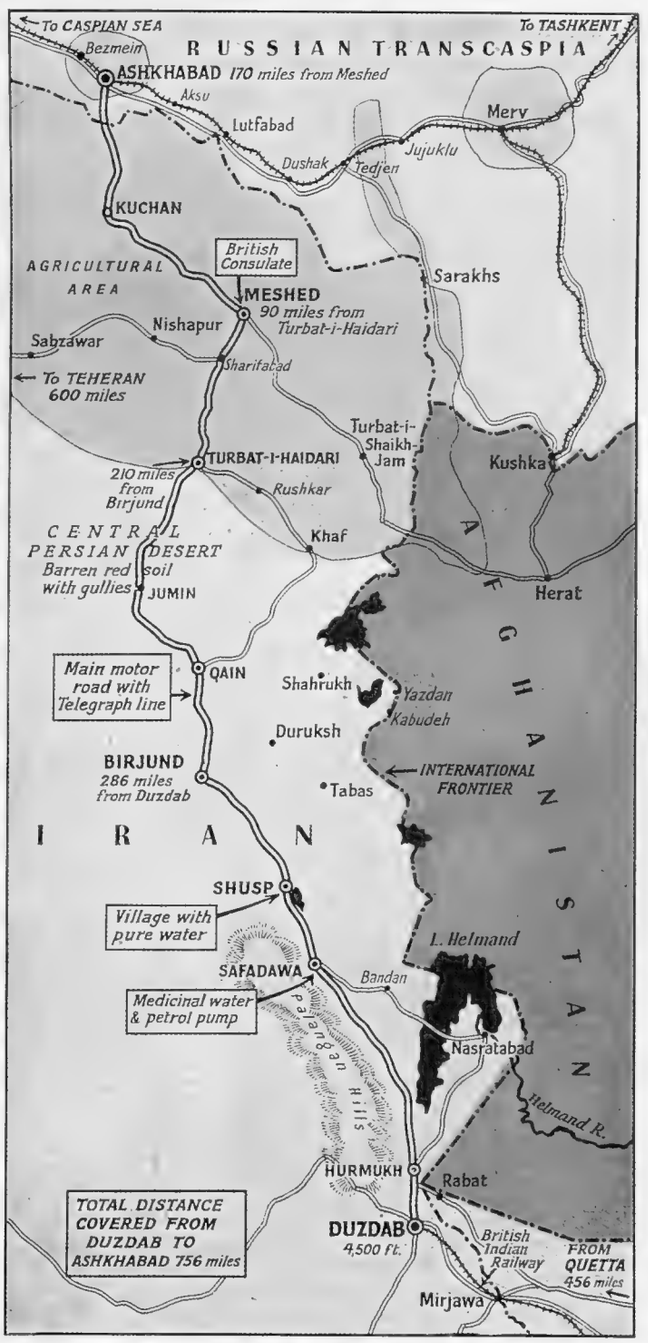
This easterly backdoor route starts from Duzdab, where it connects with the railway into India; it runs nearly due north for 600 miles to Meshed, where connection to Russia is either by road to Ashkhabad (170 miles farther on, where the Russian railway to the Caspian Sea is tapped), or by road for another 600 miles to Teheran, whence access to Caucasia is probably easier.

In the last war the railway line from Quetta to Nushki was extended by stages to just across the Persian frontier at Duzdab—a water point. This "town," populated largely by Indians, consists of a few rows of mud-brick houses in the middle of a largish plain. From here, in the 1918 campaign, a road was constructed along the route of a camel caravan track to Meshed, and then on to Ashkhabad.

It is this road, much neglected (but later partly reconstructed), that forms the gashes and gullies, green wherever there is water. From Turbat to Meshed is an area of good cultivation. The villages can only exist where water flows: they are mostly built of sun-dried bricks made from local earth or clay. Most of the houses are domed, the bricks being built up without other support: the gardens and fields are mostly mud-walled, so that the only green on view is overflowing vine shoots and shady trees.

The route is not entirely lonely. There is a telegraph line all the way not far off to keep one company. The inhabitants vary from coal black in certain areas of the south, to quite fair in the north.

Along the 600-mile stage to Teheran the road is in far better order, despite a number of high ranges. This section can be covered easily in three days, two nights being spent in Persian road houses—converted caravan or camel serais.



A BACKDOOR THROUGH PERSIA INTO RUSSIA: The road from Duzdab and India, through Meshed to Ashkhabad and the Caspian

A VISIT TO OXFORD IN WARTIME

The Life of the Undergraduates is Hard, and Each has to do His Stint of National Service. Food, Luxuries and High Living are Rarities, and Against all Scholastic and Social Endeavour Looms the Background of War and Grim Preparation for It

By CHARLES GRAVES

IT was with a kind of contemptuous envy that I went up to Oxford this week. But that mood changed very quickly. It is true that in the last war every youth was called up at the age of eighteen, or at latest, eighteen-and-a-half, with the result that the undergraduate population of Oxford was a handful of crocks and neutrals. To-day there are nearly 2,000 undergraduates in residence, but what a residence! In many cases they live in alien colleges, eat in an alien hall and attend an alien chapel. Mind you, it is still college life, and the main traditions survive. And to live in another college is scarcely a greater break than living in lodgings, which undergraduates habitually do in their third and fourth years. But, instead of choosing what rooms he likes according to their rent, and having what meals he likes in college, whether in hall or in his own rooms, the wartime undergraduate now normally pays an inclusive fee of 12s. a day, for which he gets his rooms, heat, light, service and food. (Shades of Hore-Belisha and the Prince Rupert Rooms.) In several colleges, the system whereby liquor and tobacco could be bought in college and charged to battels has been stopped, and most undergraduates have to "double up."

Undergraduates are unquestionably leading a hard life—hard in comparison with peacetime, though, of course, not hard relatively to what they would be enjoying in the ranks. Here are some statistics of my old college, St. John's. The peacetime number of 180 has been reduced to 88. Of these, at least a dozen would be in London hospitals but for the war; 41 are studying technical, scientific or medical subjects; 15 are doing Honour Mods; 8 are studying modern languages; 5 are reading Law; 4 are medically unfit and are taking the full course; history, English and other subjects are being studied by the remainder.

As from now, the period of reservation for an undergraduate is reduced to three terms. This means that those who have won scholarships in December come up to the University the following month instead of waiting until September. After three terms, an undergraduate can now take an Honours test on what approximates to about a third of the material of the old three-years final school. Previously, if he was lucky enough as to survive another three terms, he could take another part. The new regulation demands a series of sectional examinations. All this, I may say, affects only those who are not taking medical, scientific or technical subjects.

It is presumed that every undergraduate, when he arrives at the University, has passed his Certificate A at school. If he has failed to do so, he must pass it as soon as possible. This is followed by Certificate B (again with the exception of those studying medical, scientific and technical subjects).

Military training demands a minimum of one full day per week and two half-days a week—though one of the latter is called "voluntary-compulsory." A.R.P. duties and fire-spotting have to be undertaken in equal measure by undergraduates taking medical, scientific and technical subjects. There is also a three-weeks camp under Army conditions—not to mention University Air Squadron.

Undergraduates who are going to be called up can roughly be divided into three categories—those joining the infantry, those going to the Royal Artillery and those who are wanted for the Royal Armoured Corps. Despite these military duties, a certain amount of sport is still being maintained. St. John's has joined up with Worcester—not Magdalen, as we did in March of '19; Oriel has linked up with Hertford; Brazenose with the House; and New College with Magdalen.

Very few Scouts are left, their places being taken by women and youths.

Food in some colleges is definitely poor in quality and quantity. There is one where lunch sometimes consists of only soup and a sweet.

The teaching system in wartime has presented a number of problems. Many tutors, thinking that the University would cease to have any real existence in wartime, undertook to perform such national service as they should be asked to. In consequence, many are now in Government offices or research institutions. Others are in the fighting services, many of them overseas. Over a year ago, eleven Fellows of St. John's were engaged in some form of national service, one of them being an ordinary seaman.

One thing that strikes you on a visit to Oxford is the very considerable preparedness for air attack. It is not just a matter of a few more ladders here and there. There is a general scheme in which carefully-tested equipment is put to the best possible use by carefully-trained personnel. You see huge unsightly tanks of water in quadrangle after quadrangle. Stirrup-pumps are to be seen everywhere.

Lists of fire-fighting duties and the undergraduates detailed for them are to be seen in the lodge of every college.

By contrast, the girl undergraduates are much better off. None of their colleges has the big capital which most of the men's colleges have. As a result, they live on the income of the fees paid by the girl undergraduates. It looks, therefore, as though reservations are being claimed for them on a scale which has not been contemplated in the case of the male undergraduates. Lady Margaret Hall, of course, can no longer implement its income by leasing itself out to Dr. Buchman and the Oxford Group.

On the other hand, the undergraduates of Oxford need no longer worry about the spurious association of ideas which Dr. Buchman endeavoured to create. The Oxford University Officers' Training Corps carried on during the first year of the war with a marked increase in numbers, but with the branch of the service in which instruction was given being reduced to infantry and artillery. Permission was given to revive the Engineers Unit in January 1940, but it did not prove practicable. In the Michaelmas term of 1940, however, the Royal Armoured Corps Unit was started, and by the spring of 1941, the total membership of the Corps was 800. But this constitutes, in case of serious emergency, a special University battalion (only available during term-time) of the Home Guard. To-day, O.U.O.T.C. is known as the S.T.C.—in other words, the Senior Training Corps.

The Oxford University Air Squadron suffered an eclipse on the outbreak of war, but was revived last year under Wing-Commander H. R. A. Edwards, the old rowing Blue. Its object is to give ground training fo potential members of air crews—pilots, observers and air-gunners—up to the standard of the course at an R.A.F. initial training wing.

Looking down the list of undergraduates now in the Army, Navy and Air Force, it is noticeable that few are in the Navy, a good percentage in the Royal Air Force and a surprisingly high number in the Intelligence Corps and/or the Field Security Police. If it is not regarded by the censors as giving useful information to the enemy, Schools is, as in the last war, a military hospital.

I have already mentioned the scarcity of college servants. Here is another statistic from St. John's. There are twenty-five of them serving in His Majesty's Forces. Seven are in the Royal Air Force, and nine in the local regiment—the Oxford and Bucks Light Infantry. The latest figures show that only one has so far received a commission, but he is a captain.

Speaking generally, in Oxford there seems to be a shortage of cigarettes, beer and many of the other pleasant things of life. Whereby hangs a tale. I asked the publican of a leading tavern whether there was much "progging" compared with peacetime.

"On, no, Sir," was the reply. "You see, the young gentlemen have so little money and are working so hard that they are really not worth progging at all."

Times have certainly changed from 1919, when we all had gratuities to spend, had never expected to survive the war, were exempt from Chapels and roll-calls if we had done a year's service, and—most attractive of all—were allowed to live in unlicensed lodgings. It would be hard to find a greater contrast between those good days and the life of the Oxford undergraduate of 1942.

P.S.—The *Isis* has ceased publication until the war is over.

ONCE AGAIN—PAPER SALVAGE!

TRANSPORT RECORDS GO FOR SALVAGE: Old records of the London Passenger Transport Board have yielded over 110 tons of salvage in six months. Documents and ledgers dating back to 1896 have been sorted out at the Head Offices at Broadway, Westminster, and are now on their way to help in the war effort

DOES THIS HOLD A MORAL FOR YOU?

The fact that goods made of raw materials in short supply owing to war conditions are advertised in this publication should not be taken as an indication that they are necessarily available for export

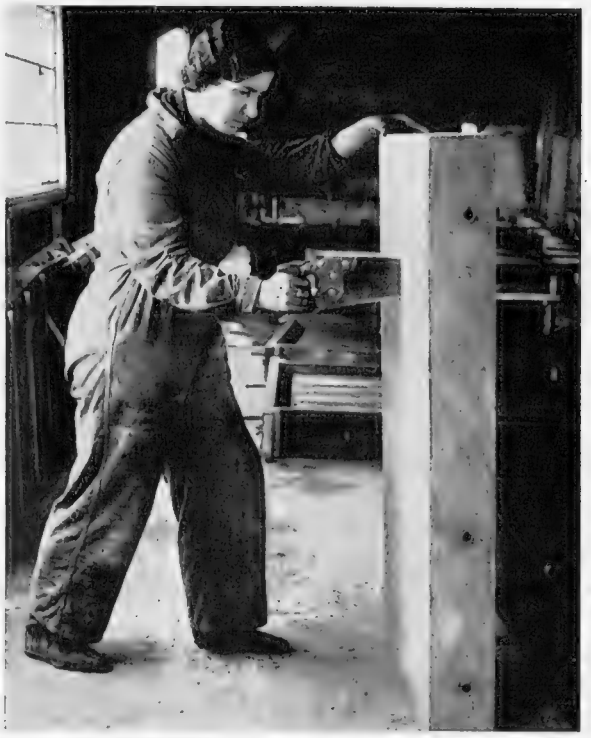
REX WHISTLER ILLUSTRATES A PALLADIAN PHANTASY

In getting Mr. Whistler to illustrate Mr. Simon Harcourt-Smith's *The Last of Uptake*, Messrs. B. T. Batsford (15s.) have succeeded in producing a perfect blend of artist and writer. The story is in reality a brief interlude in the history of a great Palladian mansion occupied by two maiden sisters, the last of the line. Upon the death of the final male representative of the family, the sisters quarrel. But no one else shall inhabit Uptake. This resolve provides Mr. Whistler with an exquisite colour picture of Uptake in flames. The textual illustrations are in monochrome offset, perfectly printed.

THE SHAFTESBURY HOMES AND "ARETHUSA" TRAINING SHIP

During 1941 no fewer than 304 children were admitted into the care of this old-established Society to be given a real chance in life, and the same opportunities that the 35,943 have received before them. Every week brings fresh news of "something accomplished, something done" by those who once occupied that place in the Home or Ship that these 304 are now occupying. These boys and girls of to-day are the men and women of to-morrow. Will you send a gift to keep these Homes going, and so enable the less fortunate brothers and sisters of this great nation to regain the birthright of happiness, good food and education? Address your gift to 164, Shaftesbury Avenue, London, W.C.2.

WARTIME TASKS



THIS IS "NASHCRETE," a concrete which can be sawn and nailed : In a factory near London women are busily turning out this new wartime building product invented by Mr. T. F. Nash. It looks and behaves like concrete, but it has the added advantage that it can be sawn, and nails can be driven into it with ease. This is because it contains a large proportion of sawdust—a waste product. Miss Elsie Bell is showing, above, how easy it is to saw through a block of the new material

BUILDING A SUBMARINE CHASER UPSIDE DOWN FOR GREATER SPEED OF PRODUCTION : American engineers have been contending that the fastest way to build a ship of small size is upside down : a shipbuilding company of Michigan have proved that this is so, by turning out a submarine chaser each week ! Here the ship is starting to roll over on her cradle to the upright position. By this method the vessel has been finished in one week instead of six, as in the orthodox manner

TIMBER BY-PRODUCT : Where large areas of timber have been felled by the Ministry of Supply, these modern kilns are set up to convert the waste pieces of timber unsuitable for the sawmills into charcoal, which has many important uses in wartime

WORK IS IN FULL PROGRESS ALONG SECTIONS OF THE NEW ALASKA HIGHWAY : This new road (as reported recently in *The Sphere*) is to connect up the United States with Alaska by way of Canada. Progress is being made steadily on sections of the road in British Columbia ; and, above, highway-building equipment is shown crossing the Cutbank River in that Province on the way to Nelson

THE YOUTHFUL LIFEBOATMEN WHO RESCUED AN R.A.F. CREW : This scratch crew was made up of boys of sixteen, one man sixty-eight years of age and another of seventy-one (who acted as coxswain) ; the only regular member of the lifeboat was the engineer. Together, this gallant combination of Youth and Age rescued four airmen from a dinghy in the North Sea

MAKING RAILWAYMEN IN THE ARMY : The Army is able to construct and maintain its own railways : it can also operate civil railways where necessary. To-day, it also runs its own railway training-centres, where soldiers are trained in all branches of the work. This picture shows some of the soldier railwaymen making a cutting for a new line. They are using a tractor which hauls a scraper to prepare the surface before the lines are laid down

The World of Books—By Vernon Fane

NOVELISTS AND EXPLORERS

"Singapore River," an Enchanting Novel of Chinese Life; Are "Lost" Explorers Always Lost?; Paul Jones, the Great Sailor and Strategist; Our Chocolate-coloured Future?

IN spite of the present implications of the title (which is not a good one in any case), SINGAPORE RIVER (Heinemann. 10s. 6d.) is an utterly enchanting novel, in the sense that reading it does transport one to another life and another world. The first part of Mr. Robert Payne's story is set in the China of forty years ago, in a remote hill village owned by the family of Cheong. It is Cheong who is the book's central character, and it is his development, essentially Chinese, both in progress and in tradition, that the story traces, mainly against the background of cosmopolitan Singapore.

For it was there that Cheong's father emigrated to found a timber business, and there that his family, philosopher-grandfather and all, followed him, and set up the inviolate little community of their family life, untouched by the surrounding pressure, and strangeness of Malays, Indians or English.

Cheong learns fine penmanship and a respect for etiquette from his grandfather, and by himself he learns to recognise the hundred varying woods in his father's sheds, comes to love that trade, and comes to love the coastline and many islands of Singapore. As a young man, he works on the foundations of the great naval base, on which construction progresses and halts, progresses and halts; a barometer of the Government's vacillations. In middle age, with the base finished, himself an established man with houses, children, love and riches, he comes to his great decision. As a child, Dr. Sun Yat Sen had been a visitor in his parent's house, and he had been brought up to reverence the man and his ideals. Now these seeds flower, and Cheong goes back to China as a common soldier, with one of his workmen, to fight in Chiang Kai-Shek's Army. With a small band of guerilla fighters, after months of extreme cold and hunger and hardship, he finds himself again in his own village, retaken from the Japanese, and before he turns south again, after them, he sees his fellow-soldiers parade triumphantly under the scroll, painted so many years ago by his grandfather: "Out of the thousand calamities, rises the everlasting peace."

Mr. Payne has a lyrical touch, and the strength of the true storyteller through all this. The delicacy and perception of his descriptive writing is quite unusual.

One amusing theory emerges from Mr. W. N. Merryman's NORTHERN CABALLERO (Robert Hale. 15s.), and that is that a number of the "lost" explorers who set out to find Inca treasure, or to examine the ramifications of the Upper Amazon, are living to this day lives of the most tranquil domesticity, with the Indian communities of the jungle. Colonel Fawcett might be such a one, and there was always the case of the German explorer who, when found living in conjugal peace with a number of brightly-painted savages, begged that his "finding" should not be a matter for any publicity, "because," he explained, "I have a wife in Germany, and it would be just like her to start a rescue expedition to get me out of this."

By his own account, Mr. Merryman himself lived with a group of Chavante Indians, near one of the tributaries of the Upper Amazon, and became one of their chiefs.

His adventures, which took him over the Andes on foot, up and down the Amazon in a variety of craft, and through a succession of bug-ridden inns and shakedowns, are told with an engaging gusto, the American equivalent of undergraduate enthusiasm, though the author must be a year or two beyond this in experience. Mr. Merryman describes an idyllic springtime in the Andes with two fellow-travellers (he was usually fortunate in companions), and a flock of the most casually dispersed sheep that even Chilean history has ever known. No Bo-Peep he, as *Time* might comment. Starting with 500 sheep and a contract to supply 10,000 of them a year to the Anaconda Copper Company's Mining Camps, he lost four-fifths of them in snowdrifts and over precipices, killed and roasted one or two, and finally gave the remainder away to an Indian hill-woman and set out to investigate a silver mine.

For my own taste, I prefer his accounts of life in the uplands, where tame chinchillas sported round his camp with fluffy ducklings, to his doings in that over-tropical jungle, but their telling is unvaried in a kind of analytical high spirits, which can be very refreshing.

Because he gave his name to a popular round dance, much used at parties for ice-breaking purposes, and because he was responsible for the first raid on British soil since William the Conqueror's days, Paul Jones is one of the few great American sailors familiarly known to Englishmen. His greater exploits, his superb strategy and seamanship, and the part he played in the forming of the first American Navy may be less known to us, but Commander Edward Ellsberg, of the U.S. Navy, has done his best to put that situation right with his excellent adventure story, CAPTAIN PAUL (Heinemann. 10s. 6d.). In this book, Paul Jones's career is followed in all the details of historical fact and permissible fiction, and he is shown very much in the light of a Captain Hornblower, whose unorthodox sea strategy brought him victory again and again in battles with the odds against him.

Commander Ellsberg is at his racy best in writing of his Captain Paul in action: there is an account of a running battle of the Bahamas, and another seemingly hopeless engagement in the snows and gales off Halifax, that are first-rate adventure stuff. His pages have the inimitable authority and liveliness of the expert, the technician writing of the craft he knows best. One could recommend this as a book for boys, but I would far rather recommend it as a book for all those who appreciate the spirit of our own times.

Mr. J. H. Curle begs poetic licence for the title of his book of sociological reflections, and, in fact, ESKIMO PIE (Methuen. 7s. 6d.) might have been called almost anything else. The ideas for the book, he explains, came to him in the Congo, on Coronation morning in Piccadilly, going up the Mackenzie River, and were finally shaped into expression in the Arctic Circle. What occupies Mr. Curle's thought is the state of the contemporary world, and this he has examined under a number of headings, such as the Waning of Religion, Nationalism of Dictators, Prohibition and Crime, Democracy and Behaviour, Birth Control and Diesel Engines. There is little banality in his discussion of these aspects of civilisation, as witness his conclusion that in a thousand years we shall be one great half-caste race, a light chocolate in colour, with crinkly hair and slightly better looks than to-day. But some of his generalisations are disappointing, and his vision of "a Golden Mean" too amorphous to accept as any solution for our present problems.

A ROYAL COTTAGE AS A RESIDENCE FOR DR. LANG: King's Cottage, on Kew Green, is a former Royal residence. It is now being prepared as the future home of the retiring Archbishop of Canterbury, who is also being given a Peerage

PORT MORESBY—A Personal Impression

By PHILIP PAGE

NOT a day passes without news of, or from, Port Moresby. New Guinea and its capital are discussed eagerly. The port has been called "the Tobruk of the Pacific," and in the frequency and intensity of the air raids to which it is subjected it might well be termed "the Malta of the Far East." Here the Australians are toiling to strengthen the last outer defence against Japanese invasion of their country. The Japanese have Port Moresby in the forefront of their ruthless ambition, and are eager to use it as a jumping-off place, first for Port Darwin, and ultimately for the whole of the Australian continent. As I write, the Japs are perched rather precariously at Lae and Salamaua, in northern New Guinea; but their aerodrome at Rabaul is useful, and powerfully defended, and is the base for ceaseless attacks on Port Moresby itself.

What of the town? I knew it in peacetime, and spent nearly a fortnight there. I landed in the early morning of March 4, 1935, from the *Stella Polaris*, the Norwegian "luxury yacht" of 6,000 tons. First impressions, which there was no reason to modify, were of a neat, clean little place, very Australian in atmosphere, and, in spite of picturesquely tropical scenery and vegetation in the surrounding country, strangely lacking in the romantic interest of so many of the islands in the mid-Pacific which we had just visited. The heat was stifling, but, at any rate while I was there, there was little or no sunny glare—just a clammy mist.

Shops, administrative buildings, hotels (very few of these), and business premises are built on the low waterfront of the fine harbour, and the first call—by hired motor-car, which was not cheap—was to a very English type of bank to change some money. The hillside at the back is dotted with picturesque and comfortable-looking bungalows, owned for the most part by fairly wealthy and extremely hospitable Australians.

But I would hardly call Port Moresby a gay place. There is a cinema (which I did not patronise), but there is little or none of the fun, illicit and otherwise, of, for instance, Tahiti, which is, or was then, the Marseilles of the Pacific. Business life seemed to be built chiefly round the various enterprises of the Burns-Philp Company, which runs a local store, and owns an important line of inter-island steamers.

One day was devoted to a drive to a native village some 20 miles distant. The inhabitants had none of the graceful beauty of the Balinese. They were very black, very hideous, very primitive, and—very smelly. From one man I obtained, by means of barter—money he did not seem to understand, but he pointed eagerly to the pair of by no means expensive socks I was wearing, so I took them off and handed them to him—a curiously carved and painted wooden shield.

PORT DARWIN, IN AUSTRALIA, UNDER JAPANESE AIR ATTACK: One of the first pictures to arrive in England showing the effect of the first bombs to fall on Australian soil. The jetty was wrecked and other damage was done in the town itself

I do not believe the stories I occasionally read of Port Moresby in peacetime having been a lazy Elysium of extravagant idlers. These seem to have been partly based on the fact that Errol Flynn sought adventure there, and that the late Douglas Fairbanks and his wife (formerly Lady Ashley) spent a few days in the course of a Pacific tour. Be that as it may, there is no "gin-swapping, white-man-in-the-tropics" type of indolence at Port Moresby now

What Figures!

Skating on thin ice is not the monopoly of the moderns. Our ancestors cut some dashing figures whenever they got the chance, though when they essayed a discreet waltz on their skates, they really had to watch their step. "My dear, Captain Anstruther was seen *reversing* with Clarissa. The disgrace of it. Mama, of course, took her home at once. Aunt Gwendoline had the vapours." What delicious affectation, but then nothing was quite what it seemed to be. The embossed bust and embellished posterior rendered the chances of estimating anything at its face, or any other value, a hideous lottery. But when once the reaction set in, whalebone in the stays became straws in the wind blowing towards a fitter and fetter-free Britain. Everything nowadays is clearer cut. Even figures and figure-work. Last week's accounts are no longer filed for mice-fodder, but under the bewitching influence of Sumlock adding calculators are made to give a crystal-clear up-to-the-minute picture of every sort of figure-work. In the twinkling of an eye everything can be estimated at its face value with the minimum of trouble and the minimum of staff — a really important factor in these days. In the interests of National efficiency — remember Sumlock.

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ALL THE COLOURS OF THE RAINBOW

A PHRASE used every day. Yet if you study the rainbow you will find in it only seven colours, the colours of the spectrum — violet, indigo, blue, green, yellow, orange and red. The British dyestuffs chemist provides an incomparably greater number. Colour, in the form of dyestuffs, enters into almost everything we wear, use or even eat in the course of our daily lives. The dyestuffs industry — purely British in origin, since it owes its birth entirely to the discoveries of W. H. Perkin and A. G. Green between 1856 and 1897 — today produces an enormous range of colours. By judicious blending the modern dyer multiplies these a thousandfold. This astonishing array of colours is necessary because fashion demands an infinite variety of shades and each class of material its peculiar type of dyestuff. The brilliant colour pageantry of peacetime is missing today, but war, for all its drabness, does not remove the need for colour, only tones down the colours that are used. The manhood of the nation and thousands of its women are in uniform, the khaki of the Army and A.T.S., the horizon blue of the Royal Air Force and W.A.A.F., the dark blues of the Royal Navy, the W.R.N.S. and the various civil defence services. There is a huge demand for camouflage on all sorts of materials. Offices still need typewriter ribbons, carbon paper, printing inks and postage stamps. The British textile trades would be helpless without dyestuffs. The list can be extended indefinitely. Since war began, the British dyestuffs industry has been working at full capacity and is being swiftly developed to fill the vital need for exports — the "sinews of war." Wherever you see colour, you can trace the hand of the British dyestuffs chemist. He shows you where, even in these dark days, the rainbow ends.

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John Bedford & Sons, Ltd.

Founded 150 Years

HAPPY indeed is the firm that on the 150th anniversary of its birthday can look back on years of prosperity, on an unbroken record of family association, on permanent contributions to the advancement of its trade, and on notable service to the community by its personnel.

Such is a summary of the history of John Bedford and Sons Limited, Lion Works, Mowbray Street, Sheffield, which came into being in 1792 as steel tilters at the rural village of Oughtibridge, seven miles north-west of Sheffield, on the banks of the River Don (which river flows through the city of Sheffield), and passed through various phases to emerge in 1871 as makers of crucible cast steel, engineering files, edge tools, engineers and blacksmiths' tools, saws, machine knives, shovels, spades and forks—all basic lines of manufacture destined to make the firm world-famous.

John Bedford, the founder, was a landowner and yeoman farmer of ancient and honourable lineage in a direct male descent dating back to 1250, and it was to set his third son John up in business in the steel trade that he rented a forge operated by power derived from water wheels, driven by the River Don. By family inheritance and marriage this son amassed wealth and was able to give his son, the third John Bedford, the benefit of what was a most exceptional privilege in those days—a Continental education.

EARLY TRADE BOOM

It was this John Bedford who founded the firm as we know it to-day. Returning to Sheffield a brilliant linguist, a man of polish, of outstanding personality, and a keen man of business, he decided, upon becoming head of the firm, to get a share of a trade boom then being experienced in Sheffield and other industrial centres of England.

In addition to keeping on the works at Oughtibridge, he opened others in Sheffield, but upon the rearrangements of certain partnerships he took his name, capital, and business out of the company, and in 1864 joined a John Bramall, as Bramall and Bedford, at works in Mowbray Street—the origin of the present extensive premises.

Soon John Bedford was again doing extensive trade with the Continent. Upon the outbreak of the Franco-German War in 1870, he went to France to safeguard his interests, and it is believed that he was the last Englishman to leave Paris before the famous siege, and the first to re-enter it after.

It was the dissolution of this partnership in 1871 which brings into review the fourth generation of Bedfords.

PUBLIC SERVICE

The mantle of public service fell chiefly on Henry Hall Bedford, the second of John's three sons, who not only succeeded his father as head of the firm, but as chairman of the Royal Infirmary, a position he held until his death in 1930.

Mr. Henry H. Bedford served as Master Cutler, President of the Sheffield Chamber of Commerce, Justice of the Peace, Town Trustee, Governor of the University, and director of the National Provincial Bank Ltd.

Associated with him in the business at this time were his brothers, John George Hawksley Bedford and William James Bedford. In due course the three sons of these three brothers came into the concern to prove worthy representatives of the fifth generation.

The three cousins served with distinction during the 1914-1918 war. Mr. Kenneth Savile Bedford (only son of Mr. J. G. H. Bedford) was killed in action, but Mr. John Bedford (son of Mr. H. H. Bedford) and Mr. Reginald A. Bedford (only son of Mr. W. J. Bedford), who was gravely wounded in France, were spared to return to carry on the family tradition.

Mr. John Bedford relinquished the position of managing director in 1935, but remained a director.

Mr. Reginald Asline Bedford is now chairman and managing director.

As this year is the bi-centenary of Benjamin Huntsman's revolutionary discovery that steel could be made from iron by liquid melting, it is of interest to note that Mr. Reginald A. Bedford is a direct descendant on the distaff side of Thomas Asline, who financed Huntsman in return for a half partnership (Huntsman and Asline) in the business which first produced crucible steels. Sheffield, with its varied steel industries, undoubtedly owes its growth and fame to Huntsman's discovery.

Thomas Asline Ward (the grandson of Thomas Asline) was in his day and generation an outstanding leader of both the public and social life of Sheffield.

TRADE FEATURES

So much for personalities in this survey of a century-and-a-half of industrial experiment and progress: the practical side presents equally notable features. From that day in 1871 when the grandfather of the present generation put up the plate "John Bedford & Sons," the firm has never looked back or stood still. It has made history with several of its products, the most notable being in the specialised production of hollow rolled bars (completely distinct from tubes) for all kinds of mining and industrial purposes.

The novel methods evolved have, since the world patent rights expired, become recognised as international standard practice.

The Company has a continued policy of growth and expansion, in accordance with its financial resources, with one view in mind of being self-contained, and in its group of factories, under central control, is now manufacturing a wide variety of highly specialised steel and steel tools of the finest quality.

The manufactures in its group of factories and departments are all serviced by the Company's rolling mills, tool-making, engineering and electrical sections and metallurgical laboratories, in addition to which the Company has evolved and produced on its own premises a considerable number of varied specialised machines to produce and improve the manufacture of its various products.

Associated with Mr. Reginald A. Bedford and Mr. John Bedford on the Board of Directors are: the Earl of Denbigh, Mr. Frank Stratford (also secretary to the Company), Mr. Arthur Waterhouse, and Mr. David G. Reid.

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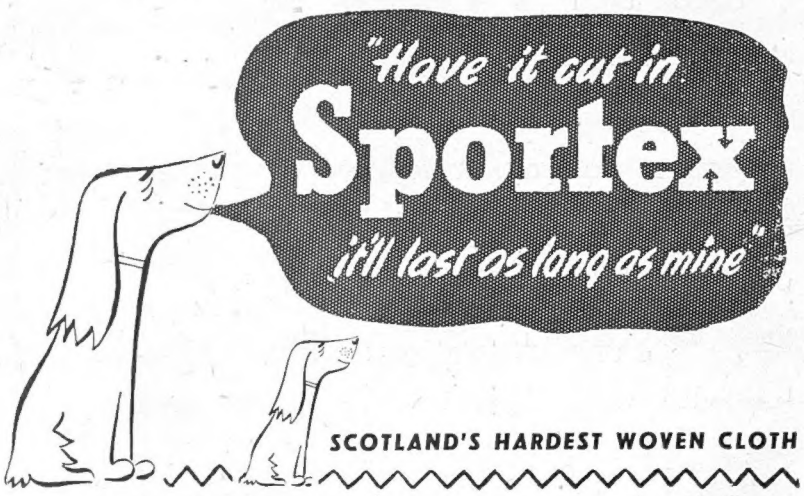

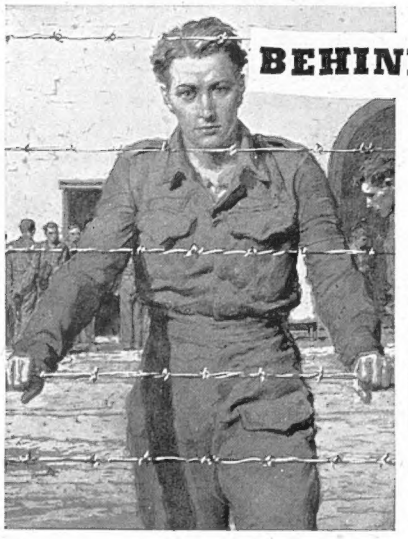

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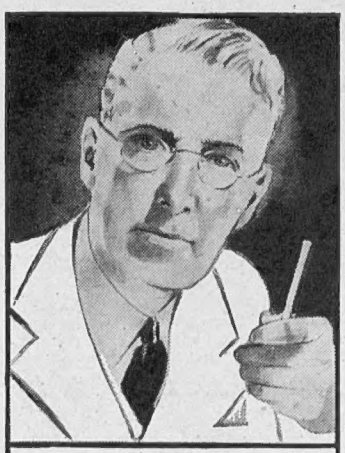

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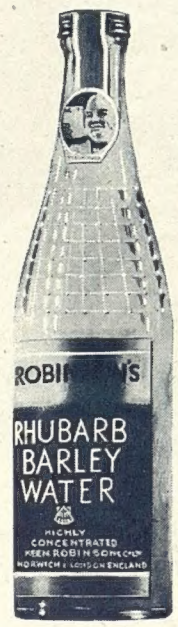

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